IMMERSION IN INTERACTIVE DOCUMENTARIES: A GAME-STUDIES-DRIVEN APPROACH IN A CASE STUDY OF *BEAR 71*

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Interactive documentaries can engage and involve their users in ways differing from traditional narrative-affective viewing experience of a documentary film. Interactive platforms can encourage for example more participative, kinaesthetic, playful and social interaction. However, interactive documentaries have in some degree failed to find and engage their users. Consequently, understanding the variety of users' experiences with interactive documentaries has become increasingly important.

The purpose of this thesis is to provide understanding of the variety of user engagement and immersion in interactive documentaries through a case study of NFB's web-based interactive documentary *Bear 71*. Since interactive documentaries and games share increasingly similar characteristics, a game immersion studies framework, Calleja's Player Involvement Model, is applied in the study. Immersion and the means to engage with documentary artefact are closely related to textual interpretation and meaning-making. Thus, the study combines methodologies from interactive documentary reception studies and game immersion studies to create methodological triangulation suitable for understanding different aspects of immersive interactive documentary experience.

Two main modes of immersion were found in the case study, i.e. the narrative-affective mode and the spatial-ludic mode. Immersion appeared to be deeper when narrative-affective and spatial-ludic modes supported each other. Such holistic experiences were also valued by the study participants. Besides the modes presented in the selected immersion framework, the participants involved themselves in learning, similarly to documentary film tradition. Motivations of following the narrative, learning more about the topic, understanding how the experience works and exploring the content intuitively were found important. Spatial-ludic involvement supported the feeling of being transported into the virtual world and freedom to explore the content intuitively created intrinsic goals and playful strategies. However, involvement in ludic qualities increased the participants' expectations of further procedurality as well as meaningful play and choices. Characteristic difficulties of combining predetermined linear narrative to interactive environments were discussed.

The results suggest that game studies can help understanding immersion as well as value of different types of engagement in interactive documentaries. Applying spatial-ludic qualities to interactive documentaries is likely to become increasingly popular in the future.

Keywords: interactive documentaries, immersion, game studies, engagement, user experience

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1 INTRODUCTION

> I think there is consensus that anyone who stays with a project, navigating their way through it, is engaged, but how, or with what effect, or even how to measure it, is very much up in the air (William Uricchio, in Česálková 2015, 103-104).

Interactive web-based documentary is an evolving field in factual new media, that situates interlinked documentary content in the Web 2.0 environment. Documentaries have been strongly associated to TV documentaries and documentary films and thus, since its evolvement, the concept of interactive documentary has been under further definition and categorizing. The major difference in comparison to its predecessors is the new role of a documentary audience: passive audiences of a documentary film have altered into active users of interactive documentaries. Consequently, interactivity offers the user at least some amount of choice on the development of the documentary.

In comparison to documentary film tradition, the interactive nature of interactive documentaries enables audience to engage with the documentary in novel ways. Hence, the engagement of the audience is not necessarily based mainly on narrative-affective elements, such as a dramatic or poetic narrative structure or compelling characters, as conventionally in documentary films. Furthermore, the user's interaction within the documentary artefact is intertwined with processes of interpretation and meaning-making (Nash 2014a, 221). Thus, experiences with interactive documentaries can vary greatly between different users.

Previous studies suggest that interactive documentaries have in some degree failed to find and engage their audiences; time spent on a platform may often be short, and rates of returning users can be low (Aufderheide 2015, 76-77). However, interactive documentary research lacks a study that would in depth aim to understand the variety of experiences that users have in and through the documentary artefacts, and how users value their experiences. Variety of user involvement in and through the documentary and immersion of interactive documentary users have not been previously studied thoroughly.

This study approaches interactive documentaries through the field of game studies that have a long history of pursuing to understand the relationship between a game and a player. Games engage their users for example through play, exploration, spatial worlds

and social elements, that are all growingly important attributes also in interactive documentaries. Game studies have studied immersion of a player for more than a decade to better understand meaning of manifold ways that players involve in games, and effects that a particular way to involve has on engaging gaming experience. While there is a growing interest in discussing the future of immersion in non-fiction storytelling (see Murray 2016), immersion in interactive documentaries has not been studied before.

The purpose of this study is to seek to understand the variety of user engagement and immersion in interactive documentaries via a qualitative case study. The research questions that the study aims to answer are:

1) Can game immersion studies help to understand immersion in interactive documentaries?
2) In what ways users of interactive documentaries are engaging with and involved in and through a documentary artefact and content?
3) What are the immersive potentials that the ways to engage and involve users offer in interactive documentaries?

Furthermore, the study aims to consider if the traditional narrative-affective engagement of documentary film audience is dominant in nonlinear online environments and what are the roles of more playful, explorative and social strategies that are growingly inherent to all interactive platforms. Understanding how users experience interactive documentaries and acknowledging the aspects that contribute to an engaging user experience can help to understand different potentials of the wide field, as well as possibly contribute to future interactive documentary design processes.

In this thesis the relevance of research questions and the study aims are discussed, supported and justified in the chapter 2. In the following chapter 3, the methodological framework and research instruments to answer the research questions are presented in detail. The chapter 4 concentrates on discussing the key findings and results of the study, and the chapter 5 considers and concludes the study outcomes.

2 THEORETICAL BACKGROUND AND LITERATURE REVIEW

In this chapter the key concepts of the study, such as interactive documentaries and immersion are explained. The theoretical setting for the study is presented and relevant previous research in the field of interactive documentaries, as well as game and immersion studies, are introduced and reviewed. Furthermore, the applicability of the game immersion studies framework to study interactive documentary immersion is justified.

2.1 Interactive documentaries

Despite the relatively young age, the evolving field of interactive documentaries has managed to attract interest and analysis. With international support by agents of film industry, such as National Film Board of Canada (NFB) and French-German broadcasting company Arte, web-based interactive documentaries have reached new audiences. Recognition to interactive documentaries is given through increasing number of prize categories and workshops on the subject at major film festivals. Scholars and professionals in the field gather to annual i-Docs -symposium, where the interdisciplinary research and practical knowhow across the field come together. Academia shows growing interest in interactive documentaries and a prominent number of research articles as well as two anthologies about the topic have been published during the last years. A variety of interactive documentary projects are distributed on diverse platforms and devices. This thesis discusses mainly web-based interactive documentaries, since they are widely available and not dependent on specific platforms or operating systems like projects designed for virtual reality and mobile devices. This section concentrates on presenting an overview of academic discussion around interactive documentaries and the diverse means utilized to involve their users, in order to understand the variety in the field and to determine the focus of this study.

2.1.1 Roots and predecessors

Interactive web-based documentaries can be situated in the field of factual new media. Availability, popularity and quantity of factual new media projects have increased during

the 21st century in correspondence with more advanced information and communication technologies and affordances of Web 2.0. However, the roots of interactive documentaries can be found in hypertext, interactive multimedia, and ethnographic collaborative documentary filmmaking.

Hypertext is discussed in this thesis as a nonsequential and nonlinear structure that includes no single order in which the text, or any other information, is to be read or followed. Pieces of information in hypertext structure are interlinked to each other, and the reader/user determines the order in which to follow them. (Nielsen 1995, 1-2.) The history of hypertext structure dates back to 1940s and Vannevar Bush's concepts of linked and annotated content, that later influenced Ted Nelson's visions of networked computer libraries and text in nonsequential form. Consequently, Nelson invented the term hypertext in 1960s. Since then hypertext can be found in the basis of Internet and HTML (HyperText Markup Language) as well as networked, collaborative new media, for example Wikipedia. (Murray 2012, 254-257.) Interactive documentaries as well are based on a hypertext structure.

The predecessors of interactive documentaries as a hybrid form of media, can be found in early experiments of computational media and interactive multimedia, such as *Aspen Movie Map* (Architecture Machine Group 1979). Developed at MIT during 1978-1979, *Aspen Movie Map* converged film footage, photography, audio, graphics and a map to create an interactive application that allowed its users to navigate through streets of Aspen, California in a style similar to Google Street View, that launched almost 30 years later (Manovich 2013, 164). Following the development of recordable storage media later in the 1990s, a great variety of multimedia projects was developed for interactive multimedia CD-ROMs. These projects combined often factual content to explorative, educative and narrative properties; for example, Louvre published multimedia CD-ROMs with virtual tours to their collections (Manovich 2013, 166). Many interactive documentaries today share the same emphasis in navigation, intuitive exploration and education. Some of the first interactive documentary projects were even published in CD-ROM format already in the 1990s, leading the way for current web-based interactive documentaries (Aston and Gaudenzi 2012, 127).

The history of documentary film includes an ethnographic, collaborative and participative filmmaking tradition, where filmmaker-anthropologists provided film cameras for the

study subjects so that they could film their own footage, as well as asked for informant feedback when screening rough-cuts of the films (Stern 2011; Sjöberg 2008, 232-233). Ethnographic documentary films aimed for recording authentic content as well as preserving the anthropological evidence of the cultures they studied. More participative interactive documentaries can be seen partly as a modern continuum of this collaborative documentary filmmaking tradition.

2.1.2 Defining interactive documentary

Since interactivity can manifest in manifold ways in and around online documentary content, it becomes necessary to categorize the ways interactivity itself can be understood and studied in the context of interactive documentaries. According to interactive media scholar Siobhan O'Flynn it can firstly be interactivity of a well-designed interface. Secondly, interactivity can be understood as a cycle of engagement between authors or media creators and users who can participate on content creation. Finally, interactivity can occur within communities in social media that are formed around documentaries which for example support social change, or in communities supporting production financing through crowdfunding. (O'Flynn 2012, 152-153.) The focus of this study is mainly on the firstly mentioned interaction, a relationship that is formed between the user and the documentary content through an interface.

The most frequently cited definition of interactive documentary is the one by Judith Aston and Sandra Gaudenzi, both scholars and co-directors of international i-Docs community and symposia. They state:

> Any project that starts with an intention to document the 'real' and that uses digital interactive technology to realize this intention can be considered an interactive documentary (Aston and Gaudenzi 2012, 125-126).

Their definition is deliberately broad and could hence be used as an umbrella term for different types of factual new media, such as web-documentaries, immersive journalism, transmedia documentaries, virtual reality documentaries, pervasive media and documentary games (docu-games). The focus of this study is in web-based interactive documentaries and thus, further definition is needed to understand the study subject and differences to its close counterparts.

O'Flynn defines interactive documentaries more narrowly:

> I-docs are often designed as databases of content fragments, often on web, though not always, wherein unique interfaces structure the modes of interaction that allow audiences to play with documentary content (O'Flynn 2012, 142).

Furthermore, O'Flynn understands interactive documentaries as non-linear experiences with a narrative that is designed as open, developing and processual and sometimes including content created by the audience (2012, 142-143). O'Flynn's definition manages to capture the nature of interactive web-based documentaries successfully. For example, one of the most well-known interactive web-based documentaries, *Gaza Sderot* (Brachet 2008), that covers 60 days of everyday life on both sides of Israeli-Palestinian border via interactive split screen, could be described by her definition. When comparing to Aston and Gaudenzi's (2012, 125-126) definition, O'Flynn's is significantly stricter, but more practical when discussing interactive documentaries in a Web 2.0 context.

2.1.3 Neighbouring genres

Since web-based interactive documentaries are not the only documentary content occurring in a Web 2.0 context, the key differences to their closest relatives, web-documentaries and transmedia documentaries, are important to acknowledge.

Web-documentaries use the Internet as a distribution platform for traditional linear documentary film, that may not have any interactive components (O'Flynn 2012, 142). Besides a distribution channel, Internet is also a community-building tool, since many web-documentaries aim for viral social media campaigns and active global communities around the documentary discourse. A well-known example of linear web-documentary without integral interactive elements is the controversial *KONY 2012* (Russell 2012), a short film for raising awareness about Ugandan war criminal Joseph Kony, in order to make him globally known to expedite his imprisonment. The film became viral in 2012 and has been since viewed in YouTube over 100 million times.

With transmedia documentaries, the narrative content is designed for and distributed on different platforms, and usually but not always designed to include interactive and participatory components (O'Flynn 2012, 143). One example of popular transmedia documentary is *Alma* (Dewever-Plana and Fougère 2012), that discusses Guatemala's gang violence through a confessional story, told by a female gang member. Transmedia content of *Alma* includes an interactive documentary, a documentary film, a book, four

online information modules that offer additional rich-media content and an iPad application.

When discussing interactive documentaries, it should be acknowledged, that boarders between its closest relatives are often ambiguous. Interactive documentaries are occasionally addressed as web-documentaries, and transmedia documentary project may include an original interactive documentary or a web-documentary.

2.1.4 Categorizing interactive documentaries

One of the leading taxonomy of interactive documentaries was presented in Aston and Gaudenzi's study, where they categorized interactive documentaries into four modes - conversational, hypertext, participative and experiential - according to the position of the user (2012, 126-128). In this taxonomy, the conversational mode understands docu-games as interactive documentaries and addresses them as conversational, since simulated 3D-worlds are created to achieve faultless conversational interaction with the system and its user. One famous example of this category is controversial *JFK Reloaded* (Traffic Games 2004) that simulates the Kennedy assassination. The game positions the player as Lee Harvey Oswald and introduces a goal to recreate Oswald's speculated gunshots perfectly, thus possibly proving or challenging the believed cause of events during the assassination. Another example is the interactive mobile application *Circa 1948* (Douglas 2014), that combines kinaesthetic navigation to simulation of places in post-war Vancouver that no longer exist. The second category of Aston and Gaudenzi's taxonomy, the hypertext mode, takes into account all interactive documentaries where the user is exploring the documentary content by selecting from predetermined options in a closed video database. For example, aforementioned, award-winning *Gaza Sderot* presents the hypertext mode. The third category, the participative mode, allows users to contribute to the documentary by uploading their own content to the database. Thus, interactive documentaries in this mode often consist of categorically arranged micronarratives, as in *18 Days in Egypt* (Mehta 2011) that presents user-generated content about Arab Spring. Lastly, the experiential mode takes its user into physical space and uses mobile technology to create an interactive documentary experience. (Aston and Gaudenzi 2012, 126-128.)

The most of web-based interactive documentaries represent the hypertext mode, since they regularly consist of interlinked content. Very often, however, the borderlines

between different taxonomies are not robust. While not all interactive documentaries allow user generated content, the most of them are participative in a sense that they utilize tools of social media or encourage users to take part in discussion inside the documentary platform.

Another useful tool to categorize interactive documentaries is examining the relationship between the user and the platform. Gaudenzi has detected three types of databases - semi-closed, semi-open and open - that host three modes of interactivity. With semi-closed, the user can browse but not modify the content. Semi-open, however, allows the user to participate but not change the documentary structure, and in open databases the user and the interactive documentary change constantly and adapt to each other. (Gaudenzi 2013, 69.)

2.2 Involvement in interactive documentaries

> A shared convention of most documentaries is the narrative structure. They are stories, they have beginnings, middles, and ends; they invest viewers in their characters, they take viewers on emotional journeys. They often refer to classic story structure. (Aufderheide 2007, 12.)

Documentary scholar Patricia Aufderheide's aforementioned quote about conventions of documentary films highlights the premises of this study. Since the role of a documentary viewer has transformed from a passive recipient into an active participant, the new means to interact with documentary content are having an impact on conventions of documentary engagement. The aforementioned traditional narrative-affective documentary film viewing experience is confronted by new ways to engage with interactive documentaries. The purpose of this chapter is to take into consideration the interactive means that audiences can involve in and engage with documentary content in a Web 2.0 environment.

2.2.1 Narrative flux

The most interactive documentaries offer their users a degree of agency over the narrative content and thus involvement of the user is not limited to absorption in following a linear narrative and processes of interpreting it. Marsha Kinder (2002, 4) discusses interactivity of a narrative in a thought-provoking manner when arguing that while all narratives are in some sense interactive, since their meanings are formed as a collaboration between

subjective authors and audiences in the respective cultural contexts, all interactivity is also an illusion as the rules established by authors necessarily limit the options of the user.

The agency of a user and its relation to the role of an author has been an ongoing discussion around interactive narratives already in the 1990s. It has been a subject of discussion in landmark publications in interactive media research, such as Aarseth's *Cybertext* (1997), Laurel's *Computers as Theatre* ([1991] 2014) and Murray's *Hamlet on Holodeck* (1998). The common conclusion is that the more freedom the user has to intervene in the narrative, the weaker the voice of the author becomes (Clarke and Mitchell 2001, 84). However, the focus of these key publications vary depending on how they understand and discuss narrative. While Laurel's ([1991] 2014, 41-44) focus is more on Aristotelean poetics, Aarseth (1997, 112) describes his idea of *cybertext* as "instead of a narrated plot, cybertext produces a sequence of oscillating activities effectuated (but certainly not controlled) by the user".

When discussing narration in interactive documentaries, it is important to acknowledge that web-based interactive documentaries are usually so called database narratives. Hence, instead of being linear dramatic storylines, interactive documentaries are designed to be coherent and conceptually merged experiences, where documentary narrative is structurally exposed to selection and combination. This can be accomplished by arranging dynamic content within a clear thematic or polemic frame that guides the meaning of and engagement with the experience. (O'Flynn 2012, 144). Thus, interactive web-based documentaries are often structured as fragmented narrative sequences focused on a community, a subject or a theme.

Narrative structures and the degree of agency of the user are naturally varying greatly between different interactive documentaries. In the hypertext mode, a narrative structure together with nuances of a story and choices of the user can be, in great extent, controlled by the documentary maker (Aston and Gaudenzi 2012, 127). Hypertext narratives are often positioning users into an editorial role, where they have a limited amount of choice within finite content of a database (O'Flynn 2012, 146). The agency that the user has over the narrative varies greatly between different interactive documentaries, but generally interactive documentaries with predetermined linear storylines provide users with less means to influence the narrative. One example of predetermined linear narrative in interactive documentaries is French *Journey to the End of the Coal* (Bollendorf and

Sègrètin 2009). While it offers a user a set of choices, the interaction does not in the end effect on how the narrative unfolds. Filmmaker Florian Thalhofer offers another perspective on the issue, arguing that nonlinearity and interactivity could free the author from forcing a predetermined point of view onto audience (Aston and Gaudenzi 2012, 133).

In the 21st century, the Internet has challenged the one-to-many type of communication of the traditional media with many-to-many communication and altered audiences into active content producers. This is reflected in novel ways of interactive narration. Many interactive web-documentaries are participatory and their users can create and add content to the documentary database. Thus, the freedom of the user is not only limited to choosing from ready made options given by the author. Consequently, construction of narrative in participatory documentaries is highly dependent on choices of users, and content of a database and its narrative potentials are possibly ever-expanding. This makes participatory interactive documentaries non-linear and rather categorical in terms of narration. Hence, they often consist of fragmented, user-created micronarratives that thematically communicate with each other within the documentary discourse.

The ambivalent roles of an author, a narrator, audience and a subject within interactive media challenge the conventions of narrative authorship. Sandra Gaudenzi argues, that especially with more participatory documentary works, the author is no longer the owner of the narrative, but the ownership of the production of the narrative is communal. Thus, the narrative belongs to the elaborate chains of relations the interactive documentary is formed of: "author, user, environment, infinite possible transformations, all the causations it provokes". (Gaudenzi 2013, 81.)

2.2.2 Emotional engagement

Since experiencing the interactive documentary is highly dependent on the input of the user, one of the main premises that an interactive documentary needs to accomplish is to keep the user interested and thus motivated to keep on clicking. One mean to motivate users to continue is to engage them emotionally. Similarly to documentary films, emotional engagement in interactive documentaries is often discussed in relation to the narrative. Proctor and Maher (2013), who have studied multi-sourced interactive documentaries and their emotional diversities, argue that in interactive documentaries the

linear narrative and associative thematic elements are equally important when creating a capturing narrative that affects the user.

However, O'Flynn (2012, 146) argues, that especially hypertext-structured interactive documentaries are often reified experiences that rarely engage their users emotionally. As the agency of the user increases, the editorially fixed dramatic narrative structure can no longer exist, which "results in the absence of a sense of narrowing horizon of choice leading to a dramatic climax and conclusion" (O'Flynn 2012, 146). This highlights the key issue in creating emotionally engaging interactive documentaries – a dramatic-affective narrative structure of a documentary film is difficult to adapt as such to interactive online environment.

However, it is important to acknowledge that when it comes to interactive media artefacts, their emotional engagement is not necessarily based only on narrative elements, such as dramatic or poetic structure or compelling characters, as often in documentary films. Emotions of the users could be directed for example to socially shared aspects of the experience, or its playful qualities. Furthermore, besides keeping users interested, emotional investment can also persuade them in offline civic engagement (Aufderheide 2015, 77).

2.2.3 Engaging platforms and play

O'Flynn (2012, 146) emphasizes, that one reason for the lack of user's emotional resonance with interactive documentaries is the often static interface design, that focuses hypertextually on what content is linked together, but is unsuccessful to fully utilize the affordances of web interfaces. Aufderheide (2015) has analysed navigation in five interactive documentaries, concentrating mainly on their design aspects. In all selected projects, the role of the user is rather limited; the user's interaction with the documentary content has often no effect on the user's progress within the experience. According to Aufderheide, the selected interactive documentaries generally lack action and only succeed on providing information about topics that are rarely present in mass media. Three projects were willing to share their web analytics and two of those indicate a low degree of commitment to continue. (Aufderheide 2015, 76-77.)

Indeed, with interactive documentaries the key problem often seems to be the interface; a great emphasis is given to create coherent content, but the environment where it is

situated is often not dynamic, playful or engaging. In some cases, interaction is merely an added layer without a specific coherence. Consequently, design decisions on interactivity of the interface are not often integrally related to the documentary theme or discourse.

However, some interactive documentaries have succeeded in interface design that supports engaging interactive documentary experience, arguments of a documentary-maker and themes that a documentary discusses. For example, the simplistic interactive split screen of *Gaza Sderot* brings both sides of Israeli-Palestinian conflict on the same space (see Figure 1). The only element in screen that keeps the two views separated is the timeline, the documented past, recorded for 60 days on both sides of the border. The timeline allows users to explore similarities of everyday life on both sides spontaneously; moving a cursor over the timeline from one screen to another controls which one of the screens plays and which pauses.

Figure 1. Screenshot of *Gaza Sderot*.

Similarly, interactive documentary filmmaker and scholar Sharon Daniel (2012, 215) discusses how interface design of her own interactive documentary *Blood Sugar* (2010) "constitutes a form of 'argument'". In *Blood Sugar*, user is zooming into visualized audio waveforms in a minimalistic, responsive interface, absorbing deeper into audio interviews of infection drug users. Daniel states that:

> the metaphor for interaction is the 'zoom', the idea that we must 'get closer', we must not look away, […] the interface is designed to draw you in - […] metaphorically penetrating the skin (Daniel 2012, 223-224).

Thus, when compared to static selecting of video sequences in *Gaza Sderot*, navigating the content in *Blood Sugar* is also more spatial experience. Spatial navigation in interactive documentaries has been previously discussed by interactive documentary scholar Kate Nash (2014a, 226-227), who suggests that it is connected to processes of interpretation and meaning-making.

Another example of engaging interface design is *Do Not Track* (Gaylor 2015), an award-winning personalized web-documentary series that discusses Internet privacy in a thought-provoking manner. It analyses user's personal internet usage, utilizing cookies and data in Facebook to demonstrate how the current web economy works and how much personal information we share unintentionally. Personalization of the content, provided by the interface design that utilizes the same techniques it discusses, brings a new level of engagement to the documentary's cunning narrative.

Relation of play and documentary content has been mainly studied in regards to docu-games (see e.g. Raessens 2006b). Sørensen and Thorhauge (2012), argue that games can establish diverse references to reality, also via their inherent game logic. Furthermore, Nash's audience study on NFB's interactive documentary *Bear 71* (Allison and Mendes 2012) suggests that users may apply playful strategies when interacting with documentary content, depending on their interpretation and in terms of what is possible (Nash 2014a, 229-233). However, since Nash's study on *Bear 71* does not rely on game studies or literature about play in its discussion, playfulness of the experience is discussed rather vaguely.

2.2.4 Social aspects and collaboration

As mentioned earlier, participative interactive documentaries utilize new means to involve users. Nash (2014b) has discussed how in *Prison Valley* (Dufresne and Brault 2009) the users can share their opinions with other users, as well as documentary makers, inside the interactive documentary interface, and even confront the views of the documentary makers. Existing examples, such as *Question Bridge* (Thomas et al. 2013), proof that interactive documentaries can also encourage their users to add personal content in relation to the documentary discourse.

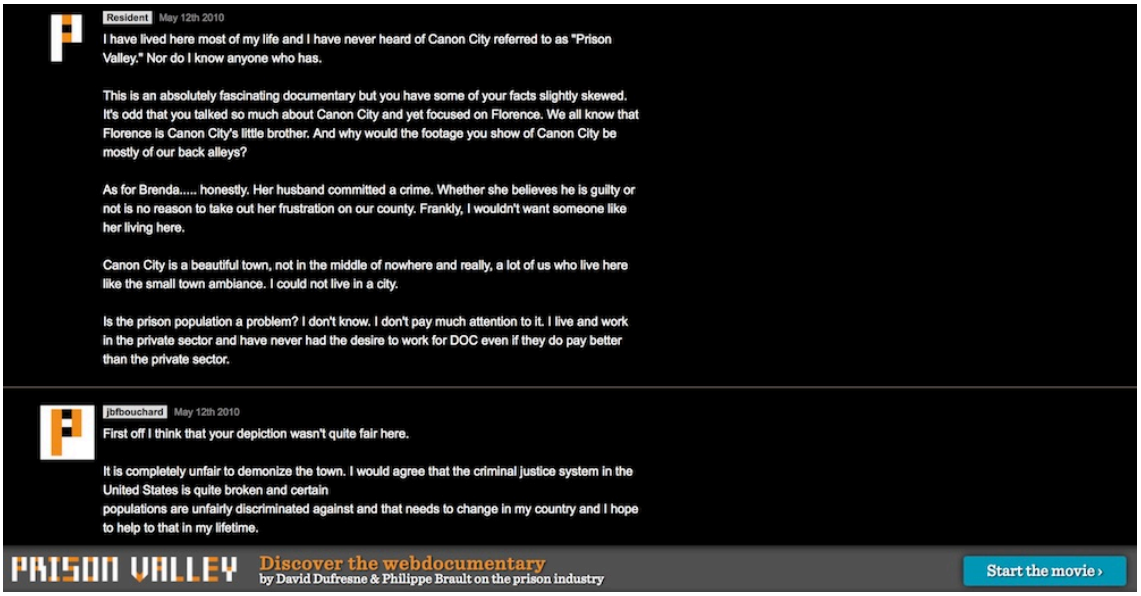

Figure 2. Screenshot of discussions in *Prison Valley*.

Potential to activate the users has inspired studies on how interactive documentaries could engage their users with the social issues (Nash 2014b, 2017). Nash argues that the position of the user and the means to engage and participate in and through the documentary, can lead to persuasive experiences, foster civic engagement as well as encourage to record, share and preserve alternative perspectives. In participative interactive documentaries a documentary maker can provide a frame and a platform, while users can pursue their own goals through the interactive documentary. (Nash 2014b.) According to Gaudenzi (2014, 143), position and agency of a collaborating user in an interactive documentary reflect to degrees of power of an individual in a society; they represent "proposition of action, a visualisation of change, within an online world that has its own rules and constraints – normally set by the author". Hence, interactive documentary participation offers an interesting continuum of documentary scholar Bill Nichols' (1991, 3) notions on ideological and activist positions that a documentary has in regards to its audience.

Since interactive documentaries discuss specific issues, their participative elements are often directed to particular communities of interest, local or global. Such collaborative projects can help individuals and communities to get their voices heard (Rose 2014) as well as serve as tools for community-building (Nash 2012, 38-39).

2.2.5 Previous studies on experiencing interactive documentary

Aufderheide's (2015) study discusses interactive documentary navigation design from a user experience point of view. The study is conducted by analysing quantitative data

consisting of extensive web analytics provided by the site owners. Web analytics can provide valuable information about user behaviour in online environment, such as the number of monthly or daily users, approximate time spent on site and the rate of returning users. However, quantitative data alone does not explain the reasons behind the user behaviour. Aufderheide herself also admits this by concluding that "user data does not, at the level provided, link usefully to navigation choices" (2015, 77).

O'Flynn argues that interactive documentaries are multidimensional experiences that present "diverse and idiosyncratic components" and that human-computer interaction and user experience design "have developed in the context of human-computer interaction and as such fall short when critiquing human-to-human interaction". Thus, instead of user experience design, interactive documentaries could be analysed through more holistic field of experience design. (O'Flynn 2015, 73-75.)

Kate Nash has conducted two interactive documentary audience studies. The first is on audience's responses to *Asylum: Exit Australia* (Verheggen 2011), a first-person simulation game, where user's goal is to flee from Australia, which is in a state of bedlam after a recent revolution. While the scenario of the game is fictional and speculative, user's choices and options are based on statistics and real experiences of refugees. Nash explains how the users are asked to fill in some amount of personal information, such as a name of the closest relative, to make some choices in the game more meaningful, as well as to personalize the content and to support identification to the subject. The study discusses also emotional engagement and empathy, and quotes from the interviews provide some interesting details about *Asylum: Exit Australia* as an experience. Nash's audience study is, however, primarily focused on civic engagement fostered by the simulation. (Nash 2015.)

The second audience study by Nash (2014a) discusses strategies of interaction in *Bear 71* in relation to processes of interpretation and meaning-making. Nash argues that interactive documentary users interact in response to the documentary text as well as their own skills and interests. Three strategies of interaction are found in the study: spatial navigation, narrative interaction and play. However, the multidimensional and ambiguous concepts of game and play in Nash's study, as mentioned earlier, are not defined, and relations of these three strategies of interaction are not fully considered. Thus, it remains unclear, for example, what kind of experiences Nash recognizes as playful, how

dominative and meaningful detected playful strategies were for users, and how playful strategies resonated to narrative and spatial aspects of the experience. Nash's study furthermore mentions that some of the participants felt immersed in the documentary narrative, but interactive documentary immersion is not discussed further. (Nash 2014a.)

Both Nash's audience studies suggest that multiple ways to involve in interactive documentary content exists. This study aims to further understand how different means to involve in documentary content effect on immersiveness of the experience.

2.3 What is a game-studies-driven approach?

Game studies, on a general level is "a multidisciplinary field of study and learning with games and related phenomena as its subject matter" (Mäyrä 2008, 6). While game studies is a broad and interdisciplinary research field with magnitude of possible approaches and methodologies, Frans Mäyrä has identified three main areas of research in game studies; the first research area focuses on studying games and their structures, the second area of research aims to understand game players and their play behaviours, and the third research area concentrates on game design and development (2008, 156).

This study aims to provide understanding about variety of experiences that occur when users engage with and involve in interactive documentaries, and hence the game studies approach in this thesis represents the area that studies play and players. Since the purpose of the study is connected to experiences and meanings people attach to phenomena, this study situates more to the sphere of cultural studies influenced game studies than for example game design research tradition, that studies player experience more from the game development point of view (Mäyrä 2008, 13-14, 160-163).

2.3.1 Brief introduction to the significance of games

While games are ancient form of culture similarly to music and storytelling (Zimmerman 2015, 19), and computer games have existed roughly as long as computers, academic game studies as sole, although very interdisciplinary, research field developed only in the beginning of the 2000s (see Aarseth 2001). Since the turn of the millennium, digital games have grown to be important cultural industry (Kerr 2006, 45) as well as very profitable entertainment industry; today digital games are more accessible and popular than ever before. Average age of gamers is rising annually, partly due to the fact that

generations that grew with video games seem to keep on playing (Stenros, Montola, and Mäyrä 2007). Furthermore, distinguishable game cultures exist around games as well as within player communities (Mäyrä 2014).

Consequently, games have a significant effect on today's technology, society and culture. This can be seen for example in popularity of gamification, application of game-like elements to a non-game content, as well as emergent discussion about the increasing ludification of culture and society, described by Mäyrä as "the spread of play as practice, playfulness as an attitude and the supposedly growing role of playful designs" (Mäyrä 2017, 47). Digital games, as well as smart phones and other digital technology shape our cultures and societies and can encourage to playful goals as well as support construction of playful identities (Raessens 2006b). Consequently, our means of communication, as well as ways to create, store, find and share information are increasingly ludic (Zimmerman 2015, 19-20).

2.3.2 Digital games as experiences

Understanding and defining what a game is has been one central topic in game studies and a magnitude of existing definitions is vast (see Stenros 2016). Thus, rather than trying to search for an all-applicable definition, it could be helpful, at least in terms of this study, to understand uniqueness of games by comparing them to other forms of expressive media. The expressiveness of games was discussed in the polarized and perhaps over-exaggerated debate between narratologist and ludologist views of game scholars in the early 2000s (see Frasca 2003). The debate argued whether games could (or should) be analysed and studied through a narratological lens or if the focus should rather be on their inherent characteristics and mechanics. While the debate might be binary, it manages to capture something essential about games as experiences: narratives in games are different from other expressive media, such as films, since they rely on user's physical input. Games are not games until someone plays them – player's interaction executes a code, or a series of rules (Salen and Zimmerman 2003, 149; Murray 2012, 379-380). Since action and outcome are depending on player's performance and choices, narratives in games are based on non-linear structure and dependent on user's active input (Sørensen and Thorhauge 2012). Consequently, instead of authoritative linear narratives, digital games offer game environments, that are "forms of designed experience which, although they

may include story elements, are subservient to the overall experience of the player" (Calleja 2011, 116). In conclusion, a narrative is only one part of a player's experience.

Ludological approach took games into consideration as a unique form of culture and art, that need their own theories and methodologies to understand and analyse them. This led to an increase of research in game studies in the beginning of the millennium. (Mäyrä 2008, 9-10.) Games engage their players in performance, the act of playing. While the experience of "play" can include magnitude of human and animal behaviour, performed by young and old, play is usually pursued for its own sake, without necessary rules or conditions for winning (see Sutton-Smith 1997). Games, however are more organized and structured form of play (Murray 2012, 379). According to Salen and Zimmerman (2003, 37) play becomes meaningful when players understand the consequences of their action, and the actions and their outcomes are related to the larger context of the game. While multiple definitions for a game exist, the most of them agree upon the significance of rules (Stenros 2016, 3). Rules create the gameplay: the possibility-space for player's interaction.

Game studies has a long history on studying the multidimensional relationship between a player and a game. Player experience is discussed, for example, by Ferrara (2012, 29-32) who divides it into elements of motivation, meaningful choices, balance, usability and aesthetics that all need to be well developed to accomplish better game design. Studies concentrating on player experience are, however, often rather utilitarian, and having relatively strong emphasis on usability (see e.g. Isbister and Schaffer 2015). Thus, the focus in player experience studies is often on a game, not on a player. Game immersion studies, however, have focused on understanding player's perspective of a positive game experience, various ways that players involve in and engage with digital games as well as the value and meaning of those different processes of involvement.

2.3.3 Game immersion

When discussing interactive media, especially games and virtual reality projects, the term immersion is used rather freely. Thus, it is necessary to determine the term and its relation to the study. Pine and Gilmore (as cited in Ermi and Mäyrä 2005, 4) have in their 1999 book *The Experience Economy* categorized experiences according to dimensions of participation and connection, where participative dimension varies between active and passive participation and the dimension of connection between absorption and

immersion. Absorption here stands for directing attention to an experience that is brought to mind, while immersion means becoming virtually or physically part of the experience. The sensation of "being there", transportation into inhabiting another world (see e.g. Murray 1998, 98-99) is one key descriptions of immersive experience. However, as argued by Salen and Zimmerman (2003, 452), one can also be immersed in playing *Tetris* (Pajitnov 1984), that does not offer spatial or sensory reproduction of reality.

In Ermi and Mäyrä's Gameplay Experience Model, immersion is categorized according to three dimensions of gameplay into sensory immersion, challenge-based immersion and imaginative immersion. According to Ermi and Mäyrä, the sensory immersion is related to stimulating audio-visual experience of an interactive game world. The challenge-based immersion is dominantly present when a pleasing balance between player's abilities and game's challenges is achieved. Lastly, the imaginative immersion is an experience that allows players to use their imagination, and in which "one becomes absorbed with the stories and the world, or begins to feel for or identify with a game character". All these three immersion categories, as well as various personal and social contexts, contribute to processes of interpretation and meaning-making (see Figure 3). Thus, immersion is a multidimensional phenomenon, integrally connected to the textual interpretation. (Ermi and Mäyrä 2005, 7-8.)

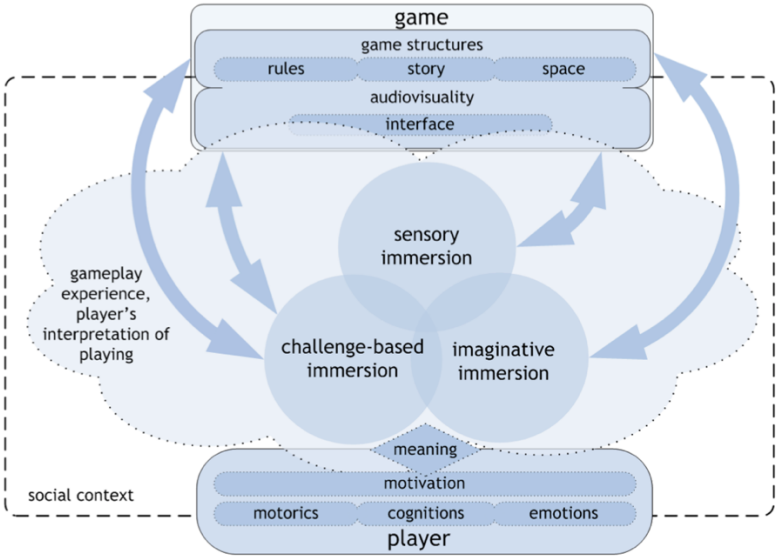

Figure 3. SCI-model of Gameplay Experience Model. Ermi and Mäyrä (2005)

However, further categorizations on immersion exist. Marie-Laure Ryan (2009, 53-56) approaches immersion from a strongly narratological perspective and suggest that a

division should be made between ludic and narrative immersion. Ryan's (2009, 53) idea of ludic immersion is "a deep absorption in the performance or the task" that presumes some physical activity from its participant, and is thus similar to Ermi and Mäyrä's (2005, 8) dimension of challenge-based immersion. Narrative immersion, however, is purely a mental activity that is related to engagement with the storyworld, and can be further divided into spatial, temporal, epistemic and emotional immersion (Ryan 2009, 54).

Ryan describes spatial immersion as the kinetic experience of a player navigating an avatar in a virtual 3D-world, and emphasizes the absence of it in hypertext navigation, where instant jumps from content to another deny the existence of space (2009, 54-55). Thus, spatial immersion bears some resemblance to Ermi and Mäyrä's (2005, 7) sensory immersion. However, since Ryan's idea of spatial immersion is only linked to narrative-affective aspects of the story world, it lacks the understanding of more playful aspects of spatial immersion.

Ryan's temporal immersion consists of three narrative effects - curiosity, surprise and suspense. All temporal immersion builds on user's desire to know what happens next. Epistemic immersion, on the other hand, relates to narratives where a user is trying to find out what has happened. When discussing emotional immersion, Ryan divides human emotions into two main categories: ones that rise from personal accomplishments and are directed toward ourselves, and ones that are directed toward other humans and creatures through empathy. (Ryan 2009, 55-56.) While Ryan's taxonomy is helpful in acknowledging different types of narrative-affective immersion, it largely discards the spatial, ludic, as well as social aspects of immersion.

One of the most detailed immersion theories in game studies is Calleja's Player Involvement Model, that is divided into six dimensions of involvement. Firstly, *kinaesthetic involvement* focuses on all modes of avatar or game piece control in virtual environments, varying from getting familiar with controls to the fluency of internalized movement. Dimension of *spatial involvement* deals with spatial control, navigation, and exploration, that effect on experiencing the sensory qualities of a virtual environment. Thirdly, *shared involvement* refers to player's interaction with and awareness of other agents in a game environment, be it human- or computer-controlled. *Narrative involvement* concerns the story elements of the game, but can be divided into two interrelated dimensions; the narrative that is scripted into the game and narratives that

players create themselves when interacting with the game world. The fifth dimension of *affective involvement* deals with emotional engagement in various forms, such as rhetorical strategies of affect that are purposefully designed into the game, or caused by a player's interpretation of game events. Lastly, *ludic involvement* concerns players' engagement with the choices that they make in the game and the effects of those choices. (Calleja 2011, 37-44).

Interestingly, Calleja's Player Involvement Model furthermore acknowledges two levels of involvement; namely *macro-involvement* that includes involvement such as plans, feeling as expectations before and after the actual game-play and *micro-involvement* that concentrates on attention and involvement during game-play (Calleja 2011, 39-41). Overall, Calleja's Player Involvement Model is a comprehensive immersion theory, that manages to capture a variety of meaningful and engaging aspects of the gameplay experience.

2.4 Towards the study framework

In this chapter, the suitability of game studies approach for interactive documentary research is furthermore discussed and practicality of Calleja's Player Involvement Model (2011) in this study is justified.

2.4.1 Common grounds: Interactive documentaries and games

I argue, that fluid boundaries between converging interactive media enable interactive documentaries to be studied within a framework from game studies. Actually, games and interactive documentaries have more in common than one might first imagine. Interactive documentaries are increasingly sharing similar attributes with games. As discussed in section 2.2, interactive documentaries can be customizable, playful, non-linear, kinaesthetic and social.

Furthermore, while games as well as films express meaning through narrative and audio-visual representation, games and other interactive media, including interactive documentaries, are furthermore expressive on their mechanics. In a rule-based system actions have consequences. Thus, games convey meaning and make arguments also through processes. Bogost (2007, 28-29) discusses the power of games to make claims about how things work through rules as procedural rhetoric. The processes in games can

furthermore represent processes in the real world, and rules can model "the behaviour underlying a situation" (Bogost, Ferrari, and Schweizer 2010, 69). Consequently, procedural rhetoric can be applied to create persuasive experiences that challenge our attitudes (Bogost 2007, 340) or solve real problems (see Ferrara 2013). An example can be found in the persuasive game *Papers, Please* (Pope 2013) that utilizes procedural rhetoric to discuss human rights and processes of immigration by positioning the player as an immigration officer of a fictional communist state.

Games can hence represent our realities more deeply than through a moving image or a simulation. The processes in games do represent as well as comment on our cultural and social values, intendedly or not. For example, as described by Murray (2012, 155), in *The Sims* (Wright 2000) traditional middle-class American values like career success, cleanliness and family life are depicted in the game by the underlying code that reinforces these factors in it. Game mechanics can also portray personal values and ideals as in Rod Humble's *The Marriage* (2007), where the mechanics for balancing graphic patters represent dynamics of a relationship and reinforce consideration, almost empathy.

Procedural rhetoric is also present in interactive documentaries. For example, interface design in *Gaza Sderot* reflects the dynamics of power: the user selects to play video footage from either Israeli or Palestinian side by moving the cursor over the video, but both voices cannot be heard simultaneously. Hence, as highlighted by O'Flynn (2015, 80) "choose one clip from one community and we subordinate the other community". Surprisingly, while game studies have pondered procedural rhetoric for a decade, it is very rarely discussed in regards to interactive documentaries.

The design of web-based interactive documentaries vary from video-dominant databases to more graphic interfaces. Consequently, the interaction and interface design of some interactive documentaries, such as *Fort McMoney* (Dufresne 2013) or *Bear 71* are utilizing affordances of game design. Previous research on interactive documentaries has noted some common grounds for interactive documentaries and games. Navigation in interactive documentaries can resemble video games (Aufderheide 2015, 73) and, as previously discussed, spatial navigation and play, as well as pleasure and agency are important for interactive documentary user experience (Nash 2014a, 232-233).

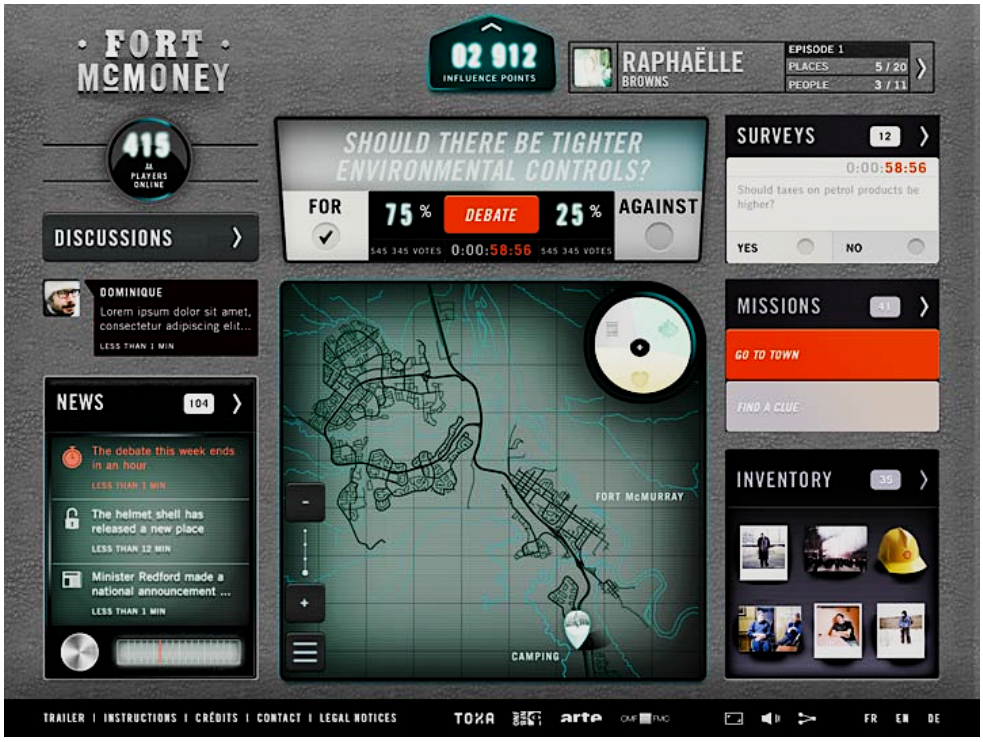

Figure 4. Screenshot of the interface in *Fort McMoney*.

One could argue that some attributes typical for games, especially rules or goals, are atypical for interactive documentaries. Calleja defines rule system in games as "the machine behind the representational surface of the game (…) generally intended to create a landscape of interesting choices for the players to engage with" (2011, 148). Since digital games and interactive documentaries are both ergodic media texts based on algorithms to provide meaningful reactions on users' input and choices, rules could be understood as a grid that structures the interactive experience and determines the actions that user is allowed to perform. This structure, that the user learns during interaction, I argue, is the rule system of an interactive documentary. Furthermore, Nash (2014a, 229) suggests that interactive documentary users might develop their own "interactive strategies" for the documentary. These interactive strategies resemble intrinsic goals in games, while Nash (2014a) does not discuss them as goals per se.

Many interactive documentary scholars approach the field of their study via Janet Murray's (1998, 71-90) definitions of affordances of digital media, namely procedural and participatory properties that link to agency, and spatial and encyclopaedic properties that link to presence (see e.g. O´Flynn 2012, 144-145; Aston 2016). Thus, following Murray's (1998, 71-90) definitions, interactive documentaries would be rule-based, responsive and designed to contain high capacity of information and encourage

exploration– all of these properties are also qualities of games. Furthermore, interactive media scholar Siobhan O'Flynn (2015, 78) suggests that game studies could provide models for more comprehensive understanding of interactive documentary user experiences.

Some games that are based on real events or experiences, such as *1979 Revolution: Black Friday* (Khonsari 2016), a game about revolution in Iran that premiered in Sundance Film Festival, or simulation game *Asylum: Exit Australia* are also often discussed as interactive documentaries. Thus, borderlines between games and documentaries are already in some cases dissolving in the current converging media landscape and increasingly ludic culture.

While such docu-games can include more competitive ludic elements, where a certain kinaesthetic performance is necessary for achieving a goal, similar elements are not typical for interactive web-based documentaries. In this sense, interactive web-based documentaries are often rather explorative; users are not necessarily aiming for a particular performance. This could be seen as one of the key differences between interactive documentaries and games.

Lastly, since games have a certain tradition in aiming on authenticity, realism and feeling like "real life", and documentary films have a long history on experimenting with representing the real, it seems natural that they would eventually approach each other and intertwine. Calleja (2011, 168) even suggests that multifaceted phenomenon of immersion is compelling and alluring since it shares similar structural principles as everyday lived experience. Currently, the possibility of further integration of games and documentaries feels more likely than before, as both documentary filmmakers and game developers share the same interest in the potentials of emergent virtual reality. In the future, experimental projects on the borderline between a game and a documentary will very likely increase.

2.4.2 Calleja's Player Involvement Model as a framework

As discussed, interactive documentaries, similarly to games, involve the user into processes of interaction that differ from those of one-way media usage such as watching documentary films. I have argued that interactive documentaries are multidimensional experiences that, besides the traditional narrative-affective documentary involvement, engage their users in for example social, spatial and playful means. Studying interactive

documentary immersion can help to understand how engaging these modes of user involvement are for different users, and how the modes relate to each other.

This study utilizes Calleja's (2011) Player Involvement Model as a main framework for detecting different dimensions of involvement and immersion. While Calleja's Player Involvement Model is designed solemnly for games, all modes of player involvement can be found in interactive documentaries. Furthermore, all games do not share the same attributes or dimensions to involve and engage the player; *Tetris* and *The Sims* are different kind of experiences, but both can be immersive. Calleja (2011, 44) emphasizes that when applying the model to practice, not all dimensions are required to be equally relevant for the selected game. Similarly, the selected interactive documentary does not need to be mutually representative in all modes of involvement of Calleja's model.

The six modes of involvement in Calleja's Player Involvement Model are applied in the study accordingly:

The mode of kinesthetic involvement takes into consideration user's ability to learn and master the controls used in the interactive documentary. Since the input of the user is somewhat essential for an interactive documentary experience, the kinesthetic involvement mode is naturally playing a part in documentary involvement.

The spatial involvement mode includes all audio-visual elements, as well as elements of spatial control, exploration and navigation in the interactive documentary. An opportunity to explore or navigate the documentary environment supports multiple strategies to approach documentary content. Hence, the mode is closely related to the process of meaning-making, which has been previously noted in Nash's (2014a, 232-233) case study.

The third mode of shared involvement pursues to examine the role of other agents in and around the interactive documentary. The mode is linked to participative, communal and communicational aspects of the experience, such as opportunities to interact with other users, to generate content or to share details about the experience in social media.

The narrative involvement mode aims to understand what factors have effected on participant's interpretation of the narrative of the interactive documentary. This dimension of involvement offers inspiring grounds to discover diverse relations of

interaction, narrative and interpretation. Calleja (2011, 115) argues that narratives in games are often either scripted by their makers or alterbiographies, narratives generated by the player while interacting with a game environment. Similarly, Nash's case study (2014a, 229) suggests that interactive documentary audiences "have a 'narrativising' drive to create coherent content" and that in some cases interpretation of narrative may even create expectations that end up not being fulfilled.

Emotional engagement in documentaries is traditionally closely connected to narrative (Aufderheide 2007, 12). Calleja (2011, 136) emphasizes that in games the rhetoric power of affect lies in the conjunction of textual interpretation and the performed practice of playing. Similar to games, the active input of the user in interactive documentaries provides potential for more intense emotional experience. Emotions could be caused by meaningful choices and agency as well as social aspects of the experience. Studying the affective dimension of the experience focuses on emotions, both positive and negative, that arouse during the interaction process, and seeks to understand how other modes of involvement are linked to those emotions.

The last dimension of Calleja's model, the ludic involvement mode, discusses rules and goals (2011, 165). I have argued that the possibility-space of user's interaction with an interactive documentary is the rule system in interactive documentaries. Thus, the mode is applied to study user's engagement in the choices made during interaction in terms of meaningfulness and causality of those choices, as well as possible goals and playful aspects of the experience.

3 METHODOLOGY

In this chapter, the methods used in the study are discussed in detail. Firstly, the tradition of audience and reception studies is presented. Secondly the methodology of the case study is justified and the selection process of interactive documentary *Bear 71* as the subject of the case study is described. Lastly, the methods for analysis are discussed.

3.1 Audience and reception studies

Previous studies suggest that interactivity and meaning-making in interactive documentaries are interconnected (Nash 2014a, 221). Since the aim of this study is to discuss the variance of personal experiences within interactive documentaries, and to understand what attributes of the experience users value and engage with, the study is situated in the tradition of audience analysis and reception studies.

3.1.1 Brief introduction

Audience studies examine how people differ and converge in understanding media texts (Livingstone and Dash 2013, 105). Roots of audience analysis can be traced to Walter Benjamin's theories that considered the changing role of audience from "passive appreciator of fixed knowable meaning in a work of art" to more dynamic interactants that had their own meaning-making processes and individual responses (Siegesmund 2012, 39). Later theories such as active audience tradition and post-structural audience theories have further deepened the discussion on methods of interpreting a text, as well as the relations of interpretation, recipient's social background and context.

In the 21st century the conversation around media convergence, network society and shift of media consumers to media "prosumers" (producers and consumers) have lead the way for discussion if the whole concept of audience is anymore needed (see e.g. Rosen 2006). Consequently, the goal of media reception studies, i.e. understanding the meaning that a text has for different readers (Staiger 2005, 2), has confronted new challenges in interactive media landscape where the roles of authors and readers are often fluid and the text does not necessarily have a stabile, fixed form. While people's engagement with and through media has indeed changed, the mutuality of text and readers is still important to recognize for analysing the age of digital networks (Livingstone and Dash 2013).

3.1.2 Interactive documentary audience and reception

Active audience tradition and post-structural audience theories have had an effect on documentary film research; the meaning of a documentary is nowadays often located in the relationship between a text and a spectator (Nash 2014a, 222). Furthermore, as mentioned in the section 2.1.1, the history of documentary film involves a strong ethnographic filmmaking tradition that has deliberately blurred the lines between a filmmaker and a subject, as in improvised ethnographic films of visual anthropologist Jean Rouch (see Sjöberg 2008). In general, however, the roles of documentary filmmaker, subject and audience have been rather fixed. These roles have now been challenged with interactive documentary works, such as a participative, community-driven interactive documentary *Question Bridge*. Interactive web-documentary *Question Bridge* promotes dialogue about black male identity in America through a database that keeps expanding through user-generated content. While all interactive documentaries are not participative in such a contributive sense, they all still offer a degree of agency for users to navigate and select content according to their personal preferences. Thus, the documentary text is not only open for individual interpretations, but rather different and unique for everyone, since no fixed text exists.

The nature of the interactive documentary structure, in which the documentary content is presented according to the choices of the user, alters also the relation between the user and the reality presented. Gaudenzi (2013, 81) suggests that while users are interacting with the interactive documentary, they build their understanding of it via a series of action/reaction loops. Hence, after each decision users make, they need to re-evaluate the result of their actions and their relation and position in and through the changed media artefact, consequently building their understanding of the reality.

Reception of fluid new media texts is widely discussed in regards to Web 2.0 (see e.g. Livingstone 2004) and it has provoked conversation also amongst interactive documentary scholars. Hudson (2008, 90) argues that since reception theory concentrates on interpretation of a fixed text, it is not sufficient for studying how interactivity engages audiences. Nash (2014a, 224) approaches this dilemma by suggesting that the concept of text should make space for the different relationships and interactions that might emerge out of the text; although complex, the text is still significant in framing the documentary for the audience. Similarly, Zimmerman (2008, 288) argues that interactivity can help us

to think about documentary more as a process than content. Livingstone (2003, 28) believes in the potential of reception studies, particularly text-reader metaphor, when focusing on interfaces. As argued by Nash (2014a, 221), the processes of interaction and reception are intertwined in interactive documentaries: in order to understand reception one needs to understand interaction process. Furthermore, Nash (2014a, 224-225) has proposed a methodology to study interactive documentary reception by analysing the text together with observation and interviews. Her methodology is applied slightly modified in this thesis.

3.2 Case study: *Bear 71*

To study immersion in interactive documentaries, 13 participants were invited to interact with the interactive documentary *Bear 71.* The sample group of the case study consisted of 13 participants, 5 men and 8 women, in different age groups from 22 to 56 years. An average age of a participant was 31 years. No previous experience with or interest in interactive documentaries were required. The results indicate that the most of the participants (8 from 13) were not at all familiar with interactive documentaries before the study (average familiarity was 0.5 within the range of *not at all familiar=0 - very familiar=4;* see Figure 8, p. 39).

When recruited, participants were told that they would be taking part in an interaction study with an interview lasting altogether about one hour, and that no particular skills would be needed.

3.2.1 Methodological triangulation

Since the focus of the research is in a multidimensional phenomenon, immersion in interactive documentaries, the study utilizes a combination of different methodologies to take into account various perspectives in the issue. The selected approach, known as methodological triangulation, is applied when multiple approaches or methods provide knowledge beyond what is made possible by selecting a single approach. To promote the quality of the research, triangulation of different methods should provide different perspectives and levels. Thus, at least one method should be appropriate to explore the structural aspects of the issue and another one should capture the essentials of its meaning to those involved. (Flick 2007, 37-44).

Methodology for the case study was decided after one pilot experiment. The selected approach is largely based on cultural studies tradition, and it combines methodological tools from audience reception studies and game immersion studies. Firstly, it utilizes interactive documentary reception methodology proposed by Kate Nash, i.e. observation, screen recording and interviews (2014a, 224-225). Semi-structured interviews are also one of the central methods in more cultural studies oriented game studies, but game researchers are increasingly preferring triangulation of qualitative and quantitative methods to profit from their different strengths (Mäyrä 2008, 160-161). Hence, secondly, the study utilizes a questionnaire designed to study game immersion. In the following sections all selected methods are further described in detail and their significance to the study is justified.

3.2.2 Observation

Observing a user interacting with an interactive documentary in a solemnly natural setting, such as capturing a situation where a person would engage with an interactive documentary voluntarily as a natural part of online media practice, is problematic. Thus, a practical alternative is to study the engagement with a documentary work in more artificial laboratory setting, as is the case of this study. While laboratory studies in general might lack context, they can deliver insight into particular interest. (Nash 2014a, 225.)

The circumstances for the experiment and the interview were similar for each participant. All participants were situated in an interruption-free environment with a laptop computer, a mouse (if preferred over a touchpad) and headphones. Participants were instructed to ask help from the researcher if they had problems or questions during the experiment. The researcher was situated behind the participant during the interaction in order to minimize possible observer influence or distraction during the experiment.

The only guideline given for participants was to interact with the artefact as long as they found it interesting. No instructions on how to use *Bear 71* were given. However, participants were advised in basic commands of MacBook Pro laptop, especially on adjusting the audio volume and brightness of the screen. Only the meaning of one pop-up window appearing in the beginning of the experience was clarified before the experiment started. The pop-up window asks permission to use a built-in webcam and a microphone of a laptop, and caused uncertainty in the pilot experiment.

Since the semi-structured interviews provided a robust main method for the study and the amount of data was preferred to be reasonable, the observation part did not aim to recognize specific behavioural patters. Thus, the role of the observation for the overall study was more to provide the first impression on participants' experiences. By observing participant's progress in *Bear 71*, the first remarks on interaction were made, and thus more individually suitable questions were selected for the semi-structured interview.

The pilot experiment furthermore included a video recording of the participant during the interaction, but this was left out of the final study because one test participant found the recording process distracting. Furthermore, the value of the video footage for the data analysis was found low.

3.2.3 Screen recording

As discussed in section 3.1.2, when studying interactive media reception, the user's input at the moment of interaction together with the software or designed interface are co-creating the media text. To understand the participant's relation to the text, it is useful to be able to study the text per se. To enable this, the interaction was recorded by a screen capture programme. The importance of screen capturing has been adeptly emphasized by Lev Manovich (2012, 19-20) who states that:

> Recording the video game player's screen captures not just *how you experience* but also the concrete media artefact *constructed by a user and software* during a particular session – in other words, the *object of the experience*.

Since this object of the experience (or media text) is different for each participant, the importance of being able to view and analyse it together with other collected data may be significant in regards to understanding the processes of interpretation, engagement and meaning-making. Screen recording might be particularly useful when analysing more structural and causal aspects of individual experiences and their relation to immersion.

3.2.4 Semi-structured interviews

The focus of the study is on personal experiences; how interactive documentary users immerse in and interpret the documentary work. Therefore, semi-structured interviews are the main approach in the study since they can examine personal aspects of an original and individual interaction process in an intuitive, yet structural manner. Interviews were

conducted with each participant shortly after the interaction process to provide immediate impressions. The results of the pilot experiment proved semi-structured interviews to be a suitable main method for the study; the pilot interview provided the most detailed information about the individual experience and immersion. Only slight changes to the semi-structured interview guide were made after the pilot experiment in order to keep the interview time in maximum 30 minutes.

Each interview followed intuitively a prewritten interview guide (see Appendix 1). The interview guide utilized Calleja's (2011) Player Involvement Model's categorization on elements of involvement - kinesthetic, spatial, shared, narrative, affective and ludic– to examine the significance of these factors for participants' immersion in *Bear 71*. However, research topics, namely interactive documentaries or immersion, were not mentioned by the researcher before or during the study; they were only discussed per se in interviews if participants mentioned the terms first. This was done to eliminate possible expectations about the nature of the experience as well as to minimize the influence on participants' interpretation of *Bear 71*.

Eleven of the interviews were carried out in English and two in Finnish language. Audio from all interviews was recorded.

3.2.5 Questionnaires

To collect comparable statistic data, participants were asked to fill in two different questionnaires. The first one was filled in the beginning of each session before the interaction to gather demographic information about participants and their familiarity with different media. Another questionnaire that measured participants' immersion in *Bear 71* was filled in between interaction and interview. Since the size of the sample group is small, the questionnaires did not aim to produce statistical proof. However, they were included to bring insight to the average experience of the sample group, and to give perspective to the results of the interviews.

Demographic information covers basic data about the sample of the study, namely age, gender and occupation. While it is important to gather this data to ensure that the data is representative, it also provides anonymity for the participants: when quoting an answer that a participant has given during an interview each participant is referred to by one's gender, age and occupation. Questions concerning participants' familiarity with different

media can provide information about sample group's experience with traditional and interactive media such as documentary films and TV documentaries, games, virtual environments or interactive documentaries (see Appendix 2). Since previous study on interactive documentary reception suggests that users structure their interaction partly according to their own interest and skills (Nash 2014a, 232), understanding participants' familiarity with different media could be valuable for the analysis stage.

Ermi & Mäyrä's questionnaire for SCI-model of Gameplay Experience was used in the study to measure differences and similarities in participants' immersive experiences. 18 statements of SCI-model questionnaire are divided into categories of sensory immersion (4 items), challenge-based immersion (7 items) and imaginative immersion (7 items), all evaluated in a five-point Likert scale. Categorization of SCI-model is discussed more in detail in section 2.3.2.

SCI-model is designed to measure immersion in games and to the best of my knowledge, it has not been used to study immersion in interactive documentaries. To better reflect interactive documentary experience, statements of the SCI-model questionnaire were renewed when necessary. Original phrasings referring to a game or playing were revised to more general form to avoid influence on participants' interpretations. For example, the original SCI-model statement "The game looked credible and real" was revised to a form "It looked credible and real", and "I was very focused on my own performance while playing" was rephrased to "I was very focused on my own performance while interacting". The final order of statements used in the study questionnaire (see Appendix 3) was randomized, as recommended by Ermi & Mäyrä in the notes of their original questionnaire.

3.3 Why *Bear 71*?

Two main criteria were taken into consideration when selecting a suitable interactive documentary for the case study. Firstly, the duration of the interactive documentary should be relatively short. While participants were advised to interact with the documentary work as long as they find it interesting, the time that participants need to invest in the study should be reasonable. This was important both for making the study appealing for potential participants and for keeping the amount of gathered data realistic for the analysis. Secondly, to study the variety of diverse experiences in interactive

documentaries, an interactive documentary used in the case study should allow multiple ways for approaching it. Three interactive documentaries were considered for the study: *Bear 71, The Block* (Stockell 2012) and *Refugee Republic* (Visser, Rothuizen and van Tol 2014). All three works include some degree of spatial navigation and they can be explored according to personal preferences.

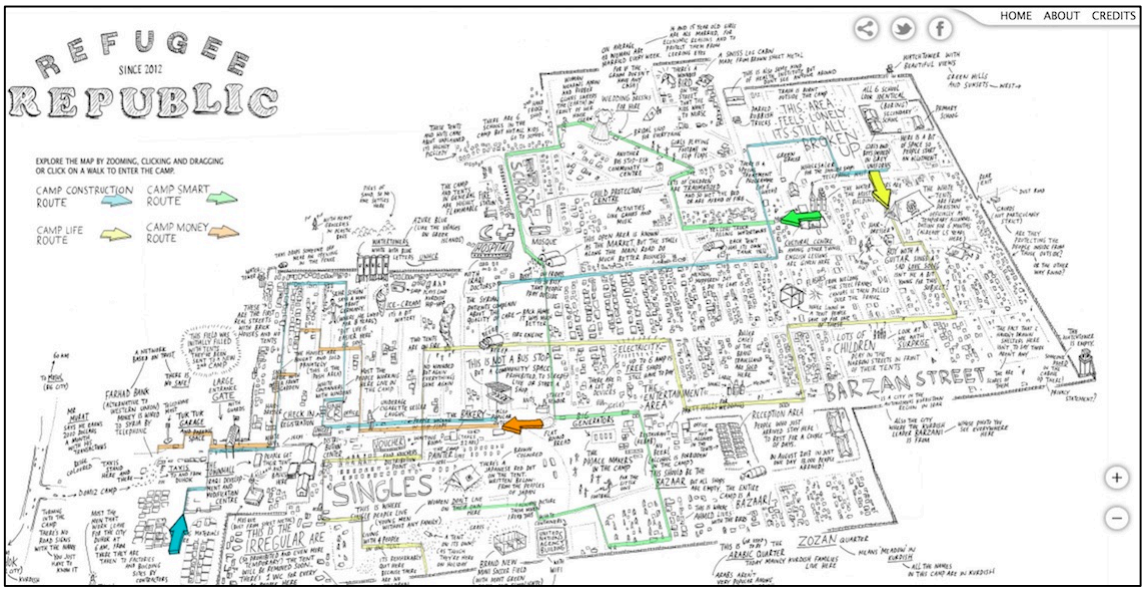

Figure 5. Screenshot of *Refugee Republic*. The map indicates the four routes through the virtual refugee camp.

Refugee Republic is the most linear out of three works. A user is positioned to explore everyday life in an Iraqi refugee camp via an interactive map. However, options for navigation are rather superficial: the map consists of four routes through the refugee camp. Each route offers a different storyline, but each storyline in *Refugee Republic* is linear and thus needs to be viewed in predetermined order from the beginning to the end. Consequently, the user can merely choose in which order to discover these four storylines. Thus the chances for a user to shape the events are very limited and hence interaction experiences would likely be similar to one another. Furthermore, the time it takes to discover all four storylines is rather long.

In *The Block,* the user is acquainted with the history of an aboriginal district in the centre of Sydney in a form of three-dimensional interactive web-documentary. The user navigates through the streets of the Block in panoramic 360-degree view similar to Google Street View (see Figure 6). By clicking on icons on the map that represent former inhabitants of the neighbourhood, the user can watch video interviews of them. *The Block*

is visually attractive and offers a spatial world that can be explored in an intuitive order according to personal preferences. However, its content is vast. Exploring the map can take considerable amount of time and the video interviews are often lengthy. The work furthermore includes a historical layer that presents a chronical timeline of TV footage that has covered the Block in the past. While *The Block* is beautifully constructed interactive documentary that can be approached in many ways, its content is too vast for the scale of the study.

Figure 6. Screenshot of *The Block* presenting its visual design.

NFB's *Bear 71* positions the user to explore the challenges that the wildlife in Banff National Park in Canada are facing in changing, more surveilled and human-dominated environment. The user can navigate through a minimalistic but interactive simulation map of the national park, find information on individual wild animals and watch footage of trail cameras, while an omniscient, compelling voice-over narrative of a female grizzly bear, the eponymous Bear 71, unfolds. When compared to other candidates, *Bear 71* is the only one with a clear duration. In the very beginning it states: "This is a 20:00 Minute Interactive Documentary", as the seconds start to count down. While the information about duration of the documentary helps the user to orientate to the up-coming experience, it furthermore sets convenient limits to the length of the experimental part of the study.

Furthermore, *Bear 71* is a hypertext structured interactive documentary that can be studied through all aspects of Calleja's Player Involvement Model. It has narrative-

affective strength in its voice-over narrative but as a previous study suggest, *Bear 71* supports multiple means to interact with it since users may involve themselves also in ludic or spatial means (Nash 2014a, 232-233). Hence, *Bear 71* is suitable for multifaceted immersion study. While *Bear 71* is not especially participatory and users cannot for example add content to the documentary, it still includes a social element. Allowing *Bear 71* to use a webcam and clicking on the user's "You" character on the map opens a webcam popup window that allows real-time communication with other online users that have allowed to use their webcams.

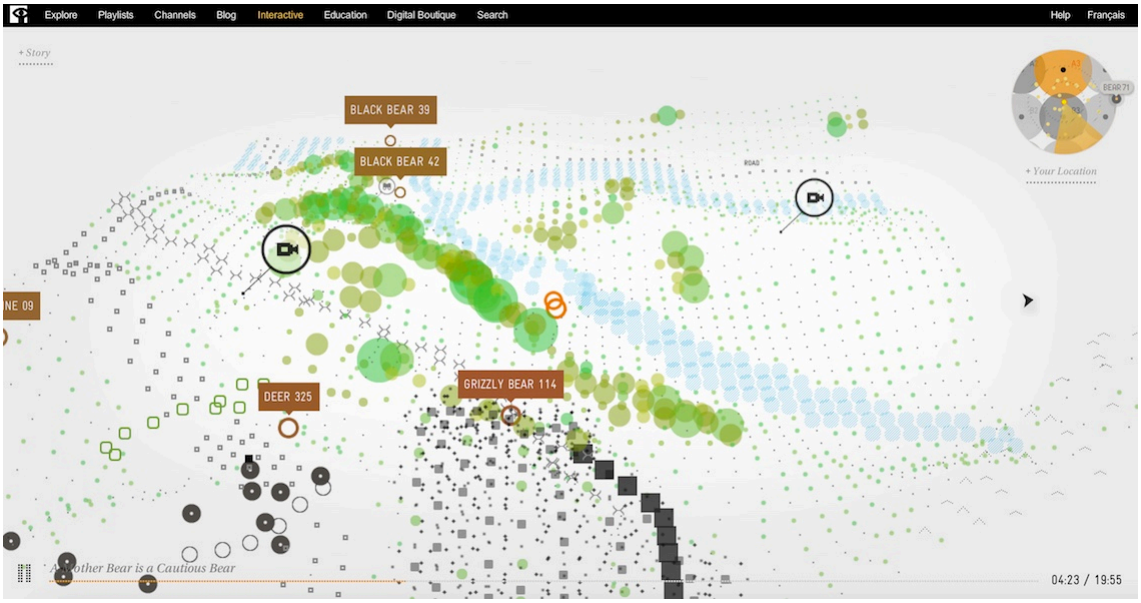

Figure 7. Screenshot of *Bear 71*. The interactive map is the main hub for content.

3.4 Data analysis process

All interviews were transcribed before analysis. The data of transcribed interviews was then categorized to identifiable themes according to conventions of thematic analysis (Aronson 1995; Renner and Taylor-Powell 2003, 2). Since interviews pursued to understand immersion in *Bear 71* according to Calleja's framework, the data was first thematically categorized according to the six modes of involvement in Calleja's Player Involvement Model (2011). Firstly, the data was colour-coded according to the modes of Calleja's model to categorize the interview answers. Secondly, the data was analysed inside the categories. Since the focus of the study is to explore how individual experiences of immersion diverse and unite in interactive documentaries, analysis phase concentrated on finding common patterns between participants, as well as exploring the differences

and nuances between experiences. Hence, after coding and categorization, similarities and differences of the user experiences were examined and interesting quotes from the interviews were selected, and later used in the study if they contributed to the study discourse or reflected to previous literature.

Thematic analysis continued with identification of patters concerning other means of involvement and engagement than those that were characteristic to six categories of Calleja's Player Involvement Model. This was done to take into account emergent categories as they became apparent, as suggested by Renner and Taylor-Powell (2003, 3). One new category for involvement was found. The data was coded respectively and analysed in a similar manner as with other categories.

Statistical data gathered in the media familiarity questionnaire was analysed by counting the median of each question to understand the average media familiarity of the sample group between different forms of media. However, with Ermi and Mäyrä's SCI-model of Gameplay Experience questionnaire the median immersion of the full sample group together with individual participants were regarded to better understand the average immersiveness of the experience as well as nuances of sensory, challenge-based and imaginative individual between different participants. Furthermore, the average immersion points per each statement in the questionnaire were calculated to find out with which statements the sample group was the most and the least agreeing with. The correlation of qualitative and quantitative data was then considered by comparing the findings of the interviews to the data of from the questionnaire.

Individual screen recordings were not separately studied, except in the cases when something specific related to interviews was reviewed, or more knowledge on the structure of the user experience was needed. Moreover, some statistical information about the experiences of the sample group, such as how many participants accepted the use of webcam, were confirmed from the screens recordings.

4 RESULTS AND DISCUSSION

This chapter discusses the key results of the case study on NFB's interactive web-documentary *Bear 71*. The major part of the chapter focuses in presenting the thematically analysed data in categories, namely the six modes of involvement in Calleja's (2011) Player Involvement Model. Furthermore, experiences of engagement and involvement in *Bear 71* that were not applicable to Calleja's model are discussed. Lastly, the limitations of the results are discussed and the need for further research on the topic is considered.

4.1 Modes of involvement: Immersion in *Bear 71*

The selected methodology for the audience study led largely to expected results. Methodological triangulation was found successful: results of qualitative data (interviews) and quantitative data (questionnaire) were mainly correlating and supporting each other. The results concerning involvement in *Bear 71* were in a degree similar than expected: narrative involvement was found to be the strongest involvement mode and social involvement mode was found to be the weakest one. However, all six modes of Calleja's Player Involvement Model were present in *Bear 71* and in some occasions involvement was different and more diverse than expected.

The results presented in Figure 8 indicate that the sample group was on average relatively experienced with other media, expect interactive documentaries. This could have caused a degree of novelty effect in the sample group, since a user has often at least a certain amount of presumptions or awareness about the artefact or the nature of the experience before the interaction. Presumptions, experiences and immersion of the users could have been more identical if the selected artefact would clearly represent a certain familiar genre, or if it would be more well-known and popular. However, since the purpose of this study is to better understand the variety of experiences and immersion in interactive documentaries, the different experiences and interpretations are actually preferred. The following sections aim to address the impact of previous media usage to the participants' experiences with *Bear 71* when significant.

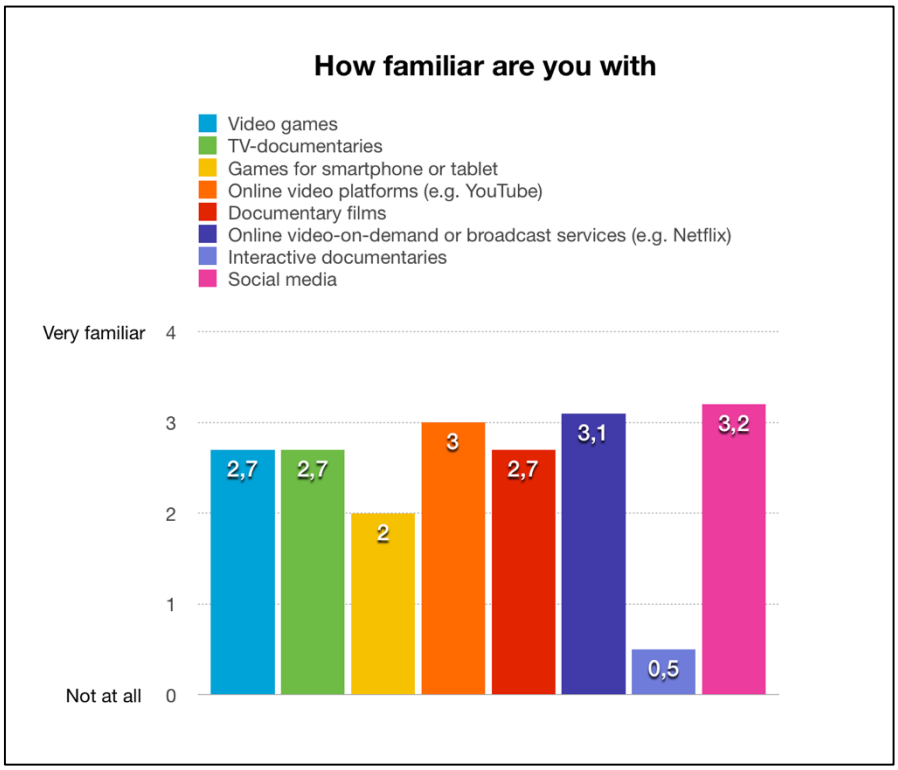

Figure 8. The results of Questionnaire 1 measuring average familiarity of media in the sample group.

4.1.1 Kinaesthetic involvement

The mode of kinaesthetic involvement in *Bear 71* is closely connected to exploration and navigation. In *Bear 71*, users can navigate their character on the map by using a mouse or arrow keys of a keyboard. The map is inhabited by icons of other moving non-player characters (NPCs) and static environmental points. New content can be opened by clicking these icons. The most of the participants found the controls used in *Bear 71* simple and familiar from other computer usage. Controls were often mentioned to be easy, fast to learn and intuitive.

The results suggest that learning controls quickly had a positive effect on an overall experience.

> There was a steep learning curve. It definitely felt involving and engaging after a short time. As soon as I discovered the game mechanics of navigating in the world it started to deeply take my attention. I suddenly didn't think about anything else, just the interaction. (Male 22, Student.)

Same participant furthermore emphasized that by learning the controls in the beginning he could better focus on the progressing story. Correspondingly, another participant (Male 37, Software engineer) reported that since it took him a rather long time to realize

that he can navigate in the map, he felt that he had not seen where the story so far took place.

Several participants criticized the lack of guidelines or instructions in regards to learning controls. In *Bear 71* short instructions for interaction are given in the opening credits. However, opening credits are followed by a two-minute linear video sequence that doesn't allow any interaction with the introduced commands. The results suggest that a non-interactive beginning could have caused some participants difficulties in knowing when to start using the commands. Screen capture recordings reveal that the most participants were not navigating in the map during the first minute of the experience, and it could take minutes even for participants that were very familiar with video games to start interacting with *Bear 71*. This finding is supported in the interviews, where several participants wished for more upright instructions for using the map.

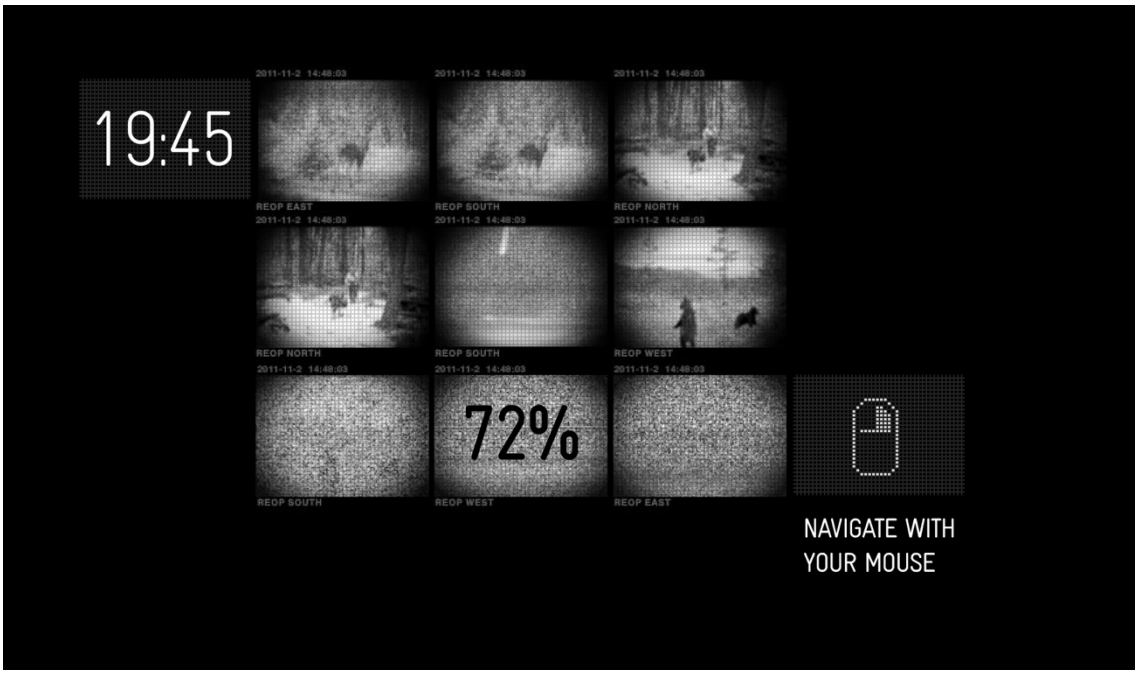

Figure 9. Screenshot of the opening credits in *Bear 71*

Altogether 10 out of 13 participants mentioned having problems with the controls while interacting. The reported problems varied from “minor flaws in the interface” to inability to navigate at all. In general, problems with controls had a negative effect on kinaesthetic involvement of the participants.

One participant stated how in the short introduction of *Bear 71* it was suggested to use arrow keys to navigate but she felt she could not navigate using them:

> I used the arrow keys a few times but I felt it wasn't clear if I am doing something or not. The map was so much moving on its own. I decided not to try navigating any more, because I felt like it was not answering my commands. (Female 28, Program manager.)

However, even the minor problems caused participants some degree of "confusion", "distraction", "frustration" and "loose of focus". For example, a participant (Male 22, Student) described the experience of clicking some icons several times before they opened as: "it kept me a bit from being involved completely".

4.1.2 Spatial involvement

In the interviews participants referred the spatial world of *Bear 71* most often to a map, a game or a grid. It was described to be "simplistic", "abstract", "unfamiliar", "minimalistic" and "vast". Understanding and decoding of the map was an individual process that took some participants longer than others. According to interviews, factors such as colours, size, position and movement were important for interpretation. Familiarity of the surroundings was mentioned often in interviews, as participants described highways, railroads, lakes and hills in the virtual world.

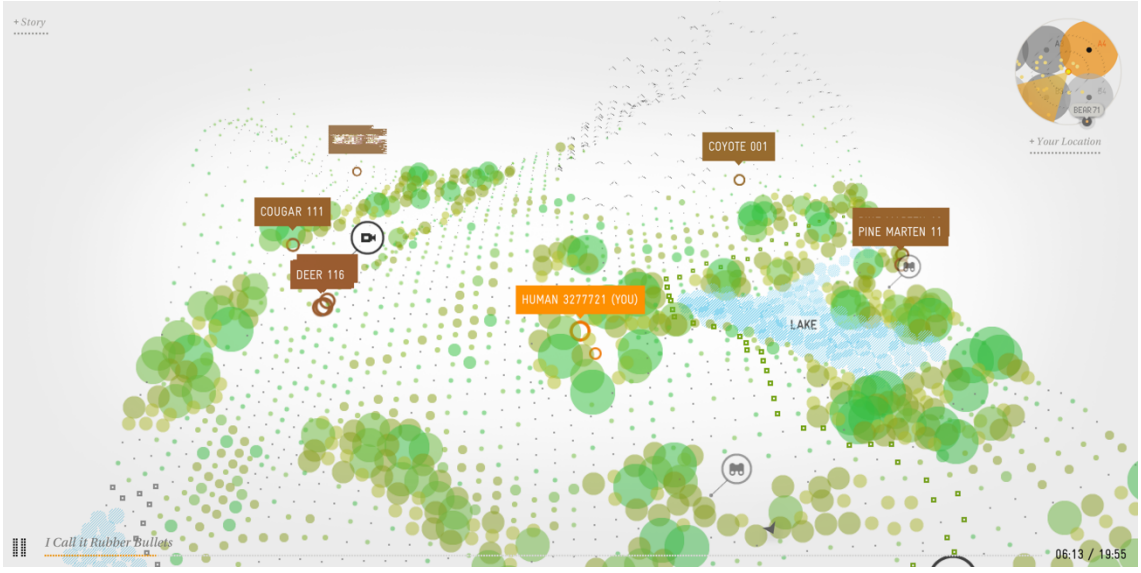

Figure 10. Screenshot of the spatial world in *Bear 71*

Because of "not being familiar with this kind of graphical representation", it took one participant (Female 30, Student) a long time to realize for example railroads and highways. However, she described that she actually enjoyed that it took her a while to interpret all the visual information. According to her, it supported a feeling of novelty during the experience as well as a feeling of gradual experience of realization. Her answer

reflects Murray's ideas on how the transparency of an interface is not necessarily valuable in games. According to Murray "a map in a game is not interesting in as a way of getting around an actual place – it is the place, and the pleasure comes from navigating from one segment to another and noticing the relationship between places" (2012, 392).

Participants linked the map of *Bear 71* strongly to be a representation of an actual place in the real world. The most of the participants agreed that *Bear 71* looked credible and real (see Figure 11). Representative aspects were furthermore emphasised in the interviews where one participant described the experience of navigating in the map as "you could experience how it looks in real Banff national park" (Female 29, IT developer). However, another participant had problems with linking the abstract patterns in the map to an actual landscape it was portraying. His comment discusses how the design of the map made it feel less real for him:

> I have spent some time in Alberta around that area and I found it difficult to connect the physical memories I have in my head with the more abstract way it was presented. So I liked the way it was done but it made me think of it purely as video game world rather than representation of real life. (Male 37, Software engineer.)

The comment relates to difficult relation that games, as simulations and programmed constructions, have when depicting the real life; there is no indexical relationship between the game content and the reality portrayed (Sørensen and Thorhauge 2012, 355). While the immersive experience in video games does not rely on vivid and realistic graphics, but can rather manifest through relevant interaction (Bogost 2007, 45-46), in interactive documentaries more abstract simulation might be difficult to connect to reality. With emergent virtual reality, interactive documentaries are likely heading into direction where in the next few years more realistic and vivid spatially immersive experiences are desired.

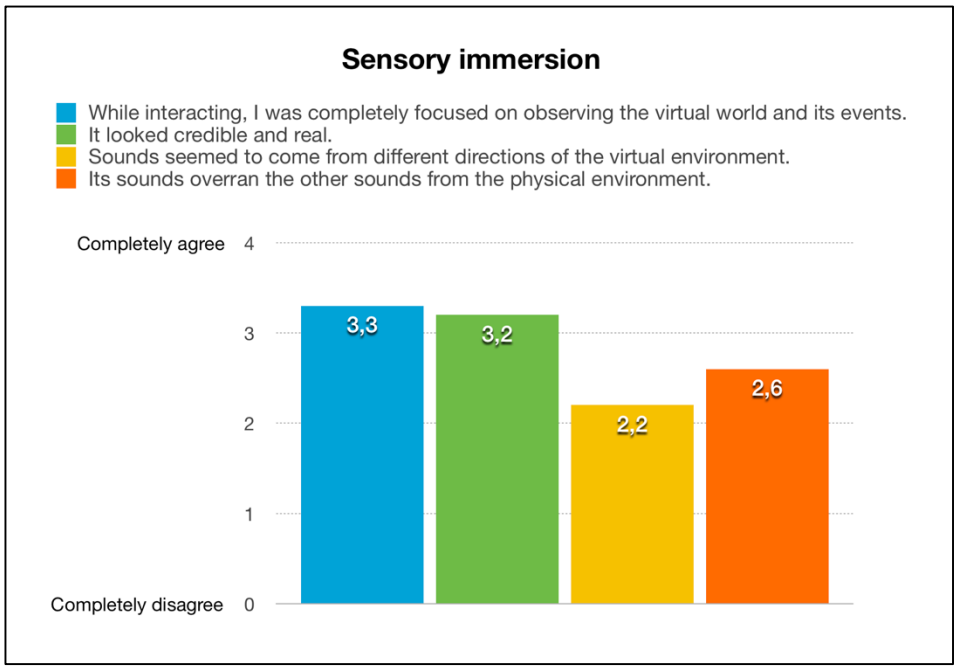

Figure 11. Average sensory immersion in *Bear 71*. The results of SCI-model of Gameplay Experience questionnaire for 13 participants.

The interactive map in *Bear 71* works as a hub for other content, such as video footage of trail cameras, information sheets about individual animals and photographs of scenery and nature. This content is accessible by clicking specific icons in the map. As Figure 11 indicates, most participants were indeed focused on observing the virtual world and the events in it. According to the interviews, navigating the map and exploring its content were the most interesting part of the experience for certain participants. In some cases spatial involvement led to immersive experiences:

> The visual aspect and allowing you to click on various places sort of helped to place you into the forest, in the environment. Rather than sitting in an apartment in Brno I really felt like I was in British Columbia in a forest. (Male 52, Programmer.)

Figure 12. Screenshot of *Bear 71* presenting a trail camera video and information menu about the character Bear 71.

Besides the visual aspects of the spatial world, audio track and sound design in *Bear 71* had a great impact on the most participants. When describing the audio, the most participants highlighted the voiceover narrative told from the perspective of a grizzly bear, eponymous Bear 71. While the voiceover mainly effected to participants' narrative and affective involvement, one participant explained how after a while she didn't concentrate anymore to what the narrator said, but the rhythm and tone of the voice effected to her "like a voice from a meditation app" (Female 26, Entrepreneur). This suggest that for her the voiceover had other than narrative qualities that effected positively for creating the atmosphere. The same participant continues on defining the auditory experience and its immersive aspects:

> Only after the experience I realized that the soundtrack was also filled with field recordings from the environment it portrayed. In a way I didn't hear the forest but I felt it, I heard it unconsciously.

In the beginning of *Bear 71*, users are encouraged to turn on their webcams. Later it is confirmed if the users allow the web application to use their webcam and microphone. The most of the participants accepted the use of webcam, but only two participants could eventually see their image on the interface. Screen capture recordings indicate that the two participants that accessed their webcam image clicked on an icon resembling to a screen between the characters' name and symbol of their character on the map. Other users who for example clicked a symbol of their character or the character's name could

not see their webcam image. The participant who saw his own webcam image on the interface describes the experience:

> I wanted to find out if there is something more that I can do and I clicked on my character. Then a menu opened with a webcam image of myself and it felt much more intaking [sic]. Suddenly I felt like I am there, by that camera. (Male 22, Student)

Some participants noted in the interviews that while they had accepted the use of webcam, they could not see an image of their selves. For instance, a participant (Female 25, Videographer) expressed that seeing herself on the interface could have helped to transport her more into virtual world. Furthermore, while seeing one's own image on the interface could have supported spatial involvement, the fact that the accepted webcam image was not displayed raised also a concern:

> What about the webcam? Now it didn't work even though I clicked on it multiple times. But I could see the webcam's green light switched on so I knew the it was on. I actually wondered where my image is streamed. If I am being recorded or is it just a trick. (Female 26, Entrepreneur.)

This highlights how introducing an element such as a webcam in an explorative and interactive media artefact can create expectations on its functional purposes and affordances as a part of experience.

4.1.3 Narrative involvement

Calleja divides narratives in games into two main groups: scripted narrative: "the preordained story elements" and alterbiography: "the story generated by the player's moment-to-moment actions within the game environment" (2011, 120). In *Bear 71* the scripted narrative is especially strong, because of the dominant linear voiceover.

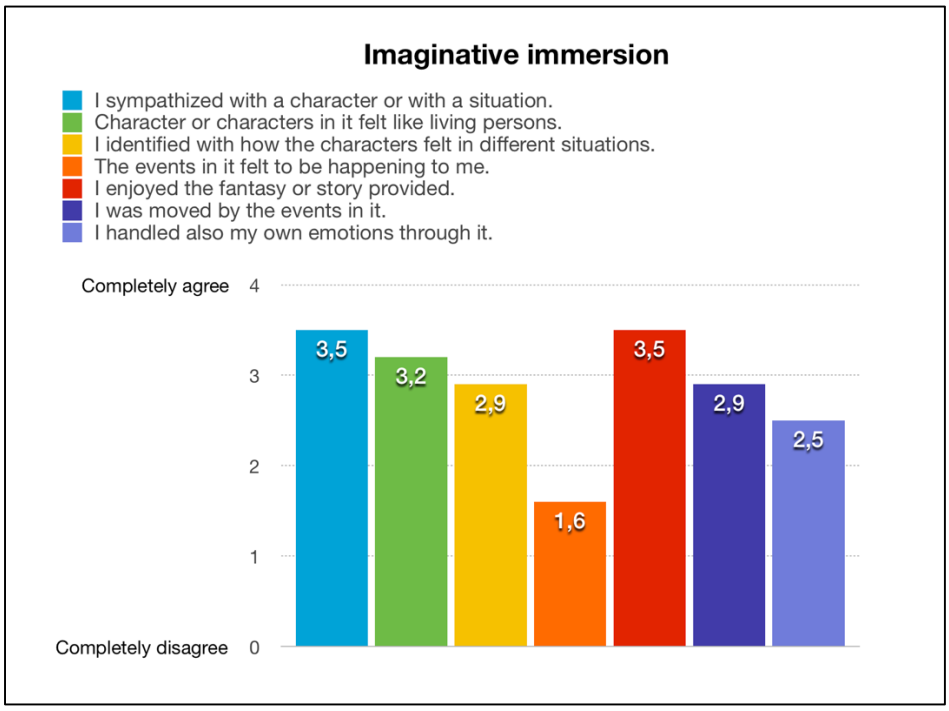

Figure 13. Average imaginative immersion in *Bear 71*. The results of SCI model of Gameplay Experience questionnaire for 13 participants.

Results suggest that narrative involvement was the primary mode of involvement in *Bear 71*. Quantitative data of the questionnaire highlights, that the participants agreed the most with the statement "I enjoyed the fantasy or story provided" (see Figure 13). Interviews reveal that participants found several aspects of the narrative engaging. Firstly, the fact that the story was "narrated by a bear" made the most of participants interested in it. It was also seen as a powerful way to tell an important story: "making the animal seem as human as possible is very successful in making the humans see things from animal's point of view" (Male 52, Programmer). Furthermore, answers highlighted the personal feel of it: "narrative from first person perspective was engaging" (Female 25, Videographer), role and position of the narrator: "she was an innocent character to whom things just happened to" (Male 22, Student) and its carefully crafted storyline: "dramaturgy of the voiceover was dominant for my experience" (Female 25, Videographer).

Participants engagement in the narrative in *Bear 71* reflects to multiple modes of Ryan's (2009, 55-56) narrative immersion; for the most participants the desire to know how the story ends, similarly to temporal immersion, was one of the greatest motivations to continue. One participant had aspects of epistemic immersion (Ryan 2009, 55) in his experience in regards of narrative:

> I wanted to see what would happen to the Bear 71 and her family. […] I think that based on a titles in the beginning, stating "there are only a few ways how a grizzly bear can die", it was pretty obvious that she was going to die in the end. But I didn't know how that was going to happen. And that is kind of a classic mechanism in dramatic literature. […] It was predicted from beginning how it was going to end and that kept me sort of going to actually see how the events would lead up to her death. (Male 52, Programmer.)

Audio track was found to be complementing the narrative engagement. Many participants highlighted the voiceover acting when discussing the narrative. Interviews suggest that the way how the story was articulated and acted effected on narrative involvement:

> I could sort of feel for the bear because the narration was really immersive. The woman who was playing the bear used great range and different tones of voice in different situations. And that also made me feel like I am experiencing the world from the bear's perspective. (Male 24, PhD Student.)

Furthermore, music was setting the tone and created presumptions for the narrative. As the same participant continues: "The music was really great in the beginning. It got me into the mood. I knew immediately it was going to be a serious topic and something to think about".

Bear 71 created very little alterbiographic experiences in regards to narrative. The results suggest that one reason for this could be the lack of agency over the dominant linear voiceover narrative. Story itself was often not found interactive and the most participants stated how they felt that their actions didn't effect the story. This can be also noted in the questionnaire results regarding narrative immersion (see Figure 13), where participants disagreed the most with the statement "The events in it felt to be happening to me". Participants did not feel like in the centre of the action in *Bear 71*, and the most described their role and position in *Bear 71* as an observer of events, not as a main character.

However, it is important to acknowledge that the narrative in *Bear 71* is designed to be closer to a documentary film than a traditional interactive documentary; instead of a database narrative that develops according to user's choices, experiencing a narrative in *Bear 71* doesn't require any interaction. The user could enjoy a 20-minute narrative-affective experience by just listening to the voiceover narrative and not interacting with the documentary work itself. This is reflected in the results that emphasised how choices of the user are not effecting the narrative or creating affective involvement in *Bear 71*.

Consequently, many participants described that the interaction in the map and linear narrative were two separate parts of the experience that didn't always complement each other. For example, listening to the story and observing the information in the map simultaneously was in many cases found difficult. Few participants suggested that an option to pause the voiceover could have helped with the problem.

Moreover, the results emphasize how participants hoped that the spatial exploration would be more connected to the narrative to create more holistic experience. Exploration on the map was often seen as an "add-on", and many participants felt uncertain if they should have followed Bear 71's character on the map to experience the narrative correctly. This uncertainty of how to approach *Bear71*, how to make the most of an experience, was repeating in many answers and for some participants it hindered the immersive qualities of the documentary.

> Because you were free to go anywhere and the main story continued on the background even if you were at the other end of the park. In lot of ways it felt like I was quite inconsequential to it. It was almost like someone was telling a story and ever so often I happened to walk past and hear some of it, but then I went and looked at a wolverine over there. Clearly the intention was to guide you through the life of the bear, but I think that there wasn't so much control over making sure you actually witnessed all of that. (Male 37, Software engineer.)

While spatial involvement didn't necessarily complement the narrative experience, the results suggest that it clearly had an effect on participants' textual interpretation of *Bear 71*. When asked what the work was about, the most of the participants did mention two dimensions of the text. For some participants who engaged with the linear voiceover narrative strongly it was a "tragic story of a bear in Canada whose life sphere was made smaller by human actions" (Female 25, Videographer). However, many participants also mentioned that there were "deeper aspects" in the story. Interviews suggest that more thematic interpretations of *Bear 71* aroused from interface design and position of the user.

> Without the interface, with just the voice over of the bear and trail camera footage it would have been a TV-documentary discussing the issues that bears are facing. But in this context, with you yourself situated on an interactive digital map it felt like it is maybe not about bears at all. […] I felt it was a zeitgeist. How we are all tagged. Everyone with a smart device in a pocket is just a tagged animal. (Female 26, Entrepreneur.)

Similarly, another participant highlighted the idea of surveillance in connection to the interface of *Bear 71*.

> Female 56, Professor: The story for me was about how nature is disappearing and how we are ruining it as humans on a broader scale. So the damage that we do. Also about the idea of surveillance, that everything is navigated and watched, kind of the *Big Brother* idea. And then it was just about one bear.
>
> Interviewer: You mentioned it being uncomfortable. What made it uncomfortable for you?
>
> Female 56, Professor: Perhaps the surveillance. That I think is depicted quite well with the way the screen works and how it is being watched.

In this degree the results link to Proctor and Maher (2013) argument how associative thematic elements are as important as the linear narrative when creating a capturing narrative that affects the user. Furthermore, these textual interpretations are interesting examples of rhetoric in *Bear 71* and making an argument in interactive media in general. They link *Bear 71* to game designer Tracy Fullerton's idea of how "the mechanic is the message" (as cited in Murray 2012, 402) as well as, in some extent, Bogost's (2007) ideas of persuasive possibilities of procedural rhetoric. In *Bear 71*, the position of a user, together with options offered to interact are reflecting the values of the designers and guiding the experience. In interactive documentary research, this supports Daniel's (2012, 215) view on how an interface itself can be a form of argument.

4.1.4 Affective involvement

Affective involvement in *Bear 71* was often clearly connected with narrative involvement; the narrative was found engaging and it often aroused rather strong emotions. When asked in the interviews if the participants felt sympathy for a character, story or some information, the most of the participants replied that they felt sympathy for the character of Bear 71. This was furthermore reflected in the quantitative results of the questionnaire, that indicate participants agreeing the most with the statement "I sympathized with a character or with a situation" (see Figure 13). Sympathy and empathy towards the character lead to immersive experiences, such as the following description:

> I felt the emotions of the bear. In the map I was just someone who was tracking him but in my mind I was feeling bad for the bear and thinking how difficult it is for animals these days. So in my head I was with the bear, it felt like it was happening to me. (Female 29, IT developer.)

Reasons for sympathy varied, but human-likeness of the character was the single most commonly found reason. Interestingly, one of the participants noted that the sympathy

for the character was created by conventions of emotional engagement familiar from films:

> I felt sympathetic for Bear 71, that is for sure. But then I got a bit annoyed because of how they wanted to make Bear 71 feel like a human being is so human. These are the tricks that we use all the time: we use children, we use cubs, we use family relations, we use *Sigur Rós* guitar music getting louder all the time. So I got a bit annoyed with these tricks but maybe they were now more visible because of the interaction. Same tricks are used in films but you don't realize them as quickly because you get sucked into the story and then the story just leads you. Now you could go to different places and change your focus from one thing to another so maybe that's why the tricks got revealed better. (Female 30, Student.)

This remark highlights how affective involvement in *Bear 71* is indeed mainly due to rhetorical strategies of affect that are related to conventions familiar from films, as well as classical drama and literature. Hence affective involvement in *Bear 71* is rather dependent on engagement with the linear voiceover narrative. While the results suggest that interaction in the spatial world can offer users insight that support textual interpretation, *Bear 71* lacks procedural qualities that could lead to powerful affective involvement on their own. These procedural qualities are typical to games where "player's active input creates potential for more intensive emotional experience" (Calleja 2011, 135). Affective involvement in *Bear 71* is not connected to ludic (and in some degree spatial) involvement and thus lacks rhetorical strategies of affect that Calleja (2011, 136) relates to user's performance and interaction. In other words, choices of a user are not designed to create affective involvement in *Bear 71*. The ludic aspects of *Bear 71*, including agency and the meaning of choice are discussed in detail in the following chapter.

While choices of the participants were not per se reported to cause affect, the interface caused emotions in some participants. One participant (Female 25, Videographer) states that in terms of following the tagged animals on the screen "the interface evoked strong emotions in me". Another participant mentioned how the fact that animals were referred to by just a number was "one of the saddest elements of it, […] just making them statistic in our request for getting more information about what is happening" (Male 52, Programmer). Hence, the interface in *Bear 71* supported rhetorical strategies of affect and contributed to textual interpretation of the work.

Figure 14. Screenshot of *Bear 71*. The video in the beginning shows a bear being tagged.

Besides the engaging voiceover narrative and the interface, many audio-visual virtues of *Bear 71* were reported to cause affective involvement. Firstly, participants described that music "guided emotions", "was used like an effect", "magnified the experience" and was "put there exactly when you were supposed to feel something". Secondly, video footage in *Bear 71* aroused strong emotions, especially the full screen video in the beginning that shows a bear being caught and tagged in a rather detailed manner. Lastly, the voiceover acting was mentioned to support affective involvement. Interviews stated for example how "the fatalistic tone of her voice made it clear that it was not going to have a happy ending" (Male 52, Programmer).

The results suggest that while affective engagement in *Bear 71* is dependent on following the narrative, it is also rather well supported by other aspects of the experience. The emotional engagement was seen as one of the main qualities of the experience, as pronounced by one participant:

> I think the purpose of the film was to get you emotional. And being a 20 minutes film it brings the emotions very quickly. Usually it would take me more time to get emotional about something. (Female 29, IT programmer.)

4.1.5 Ludic involvement

> I was about to say it was somewhere between a game and a documentary. But it depends what a game is. Because it was not something that has clearly set goals about where you have to go to. But it was playful in a sense that you could interact with it. (…) I guess that the more I got a grasp of what was

> going on and how to interact with it, the more I kind of immersed myself in it. (Female 28, Student.)

As mentioned in connection with affective and narrative involvement, the participants felt that their choices didn't have an effect on the story. However, many participants reported that the interactive interface created assumptions of it. Few participants assumed that the narrative would have began to discuss for example the animals that they clicked on, or that the decisions that they made in the map would clearly alter the story. Only one participant reported that she had an effect over the narrative by skipping some chapters of the story. On one level, her answer discusses the difficulty of combining agency and a compelling narrative.

> I found the menu where I could change the chapter of the story, so with that choice I could change the narrative. But I am not sure if it was a good choice. I missed rather a lot of the story in the beginning since I chose to explore the world instead and I didn't pay too much attention to the narrative. So since I already lost a track of it, I skipped a few chapters of the story in the end. I mean, story-wisely it wasn't necessarily a positive thing that I could choose things. (Female 26, Entrepreneur.)

However, her answer also relates to an interesting ludic aspect of *Bear 71*. While users have very limited agency over narrative, they do have a choice to select how to approach the work itself. *Bear 71* offers multiple ways to approach it and the results suggest that participants make deliberate or unconscious choices of how to experience it. As the previous quotation highlighted, this participant preferred the spatial qualities of exploring the world instead of focusing the narrative-affective qualities. In comparison, another participant concentrated solemnly on the narrative:

> My first impression was that it is basically a documentary like any other I would watch on TV, because that is my primary experience, right. And then by middle of it I realized that this actually requires something of me to participate. So then I felt a bit stupid, like what was I thinking. It is a new experience for me to participate. But I was not really interested about that aspect of it once I saw what it offered. […] The few things I clicked on weren't that interesting, so I didn't really care for that part of it. (Female 56, Professor.)

The results suggest that modes of involvement and immersion in general reflect to the choice of how participants approach the work, to what they find interesting and to how familiar they are with different media. This is similar to Nash's (2014a, 232) remark on how users structure their interaction with reference to their skills and interests. Results of questionnaire indicate that, in the most cases, the participants who approached *Bear 71*

with ludic means had also more experience in gaming. This relates strongly to Raessens' (2006a, 52) idea on how games can stimulate playful goals, as well O'Flynn's (2015, 79) remark that audiences bring their previous experiences in gaming to their interaction when engaging with interactive documentaries.

Altogether four participants referred to *Bear 71* in the interviews as a game. While previous experience with games could inspire participants to approach *Bear 71* more playful or ludic manner, the interviews indicate that also the interface created expectations of a game-like interaction. One participant (Female 26, Entrepreneur) compared the map in *Bear 71* to maps "similar as in *Pokémon* or *Zelda*", and stated that this similarity made her immediately interested in exploring the virtual environment.

The results suggest that spatial and ludic involvement were often interconnected in *Bear 71*; the participants whose experiences were more dominated by spatial involvement in the virtual world mentioned several ludic aspects of their experience in the interviews. One of such aspects was own goals, intrinsic motivations that kept them interested in exploring the virtual world.

> In the beginning it [the experience] was confusing. But as soon as I made some goals in my mind, like that I want to explore the world this way, it started to feel much more natural, and I liked it eventually a lot. […] I wanted to explore the whole map, so that kept me engaged. I tried to keep my position in the world in my head all the time, I was afraid to miss something. (Male 22, Student.)

Similarly, another participant (Male 37, Software engineer) described his own goals as "minigames" that he wanted to accomplish. Several participants who engaged with the spatial exploration mentioned that the experience didn't have strict rules or guidelines to follow. The freedom of navigation was one of the most immersive aspects of at least one experience:

> Male 22, Student: I have had experiences with virtual reality where I have felt that I am there in the world and this felt the same. I felt like in a game, in a RPG or something.
>
> Interviewer: What especially supported this feeling of being there?
>
> Male 22, Student: Being in there by the camera, that's one thing. Then moving around freely without anyone telling you what to do, and clicking on content and moving inside of videos as I wanted.

Here the results suggest that the lack of dominant rules or clearly argued guidelines in spatial exploration can encourage users to more playful and improvised approach of exploring the world. The following answer resembles elements of Caillois' (1961, 27) idea of *paidia*, a free, playful attitude:

> When there was river that I wanted to cross, I found a bridge. Or when I was going alongside of the railroads I was imagining myself jumping over wooden blocks of the railroad tracks. There was a mountain you could climb and a tower. It was totally like exploring a new world and in that sense it was playful. (Male 24, Student.)

However, *Bear 71* is a programmed system, a coded realm with its own liabilities that set limitations for user's action. The structures of play, *ludus* as referred by Caillois (1961, 13), are present, while not necessarily apparent, in *Bear 71*. Understanding the structure of the experience, as well as the mechanics of how to interact with it, together with learning the value of these actions are altogether creating the ludic aspects of the experience. For some participants these aspects were in the core of the experience:

> I felt like I was getting the most out of the experience when I was discovering how the experience works rather than when I was necessarily learning new aspects of the story (Male 37, Software engineer).

Aforementioned examples of approaches on how to interact with *Bear 71* emphasise how exploring the world as well as its rules can lead to a playful experience. *Bear 71* allows "the free space of movement within a more rigid structure" as Katie Salen and Eric Zimmerman (2003, 28) have defined the term play. Importance of understanding the structure of the experience, its rules and liabilities appears to be also reflected in the results of the questionnaire (see Figure 15), according to which the most participants lost themselves into pondering the puzzles and mental challenges of the experience.

Acknowledgement of the ludic qualities in *Bear 71*, however, created expectations of procedurality, feedback and increasing difficulty or challenge that were not fulfilled. This suggests that the choices offered were not always found meaningful. Many participants, for example, complained about the sameness and arbitrariness of the experience. One participant (Female 26, Entrepreneur) wished that she could have "advanced to a next level like in a game". She also stated that it wasn't really even an interactive experience for her; since there was no counter-feedback to her actions it didn't really matter what she did.

Answers also stated how there was “no reason for selecting one region in the map over another” (Male 52, Programmer). Another participant (Female 29, IT developer) hoped for more structured goals together with an evaluation on succeeding in them. The lack of structured goals was furthermore clearly highlighted in the quantitative data provided by the questionnaire (see Figure 15); participants disagreed the most with the statement “While interacting, I had clear goals that I did my best to reach”.

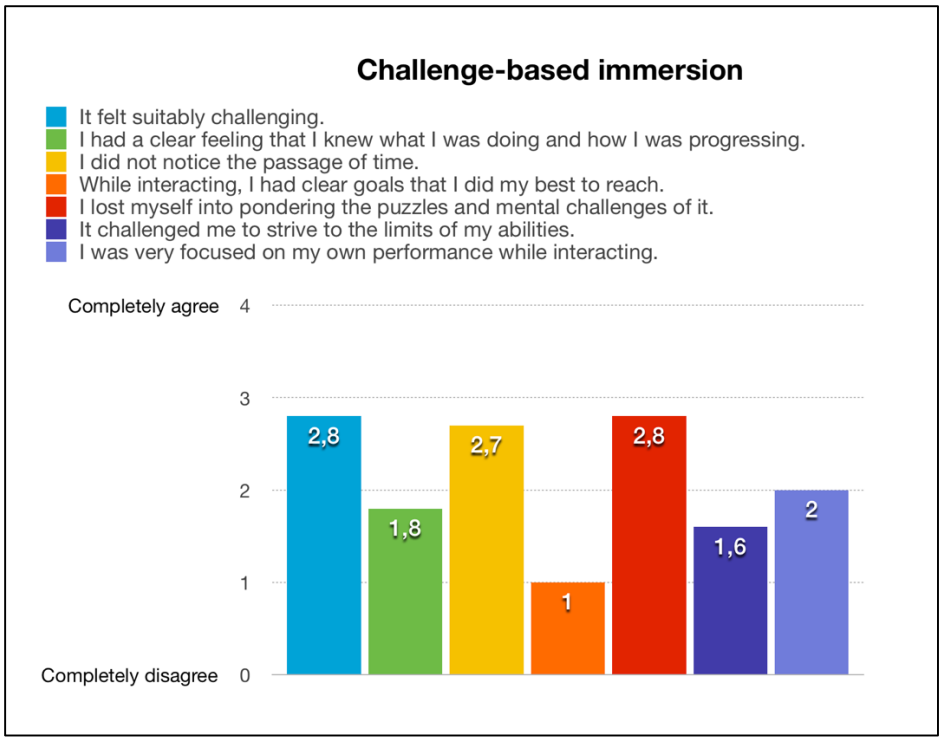

Figure 15. Average challenge-based immersion in *Bear 71*. The results of SCI model of Gameplay Experience questionnaire for 13 participants.

While the results suggest that *Bear 71* was approached playfully by some participants, statements that participants felt that their actions didn't have a clear effect on the world, or that their interaction was irrelevant for the experience, are strong signals about a lack of more structured ludic involvement. *Bear 71* appears in some degree to lack meaningful play, that according to Salen and Zimmerman (2003, 37) occurs when players understand the consequences of their action and those actions and outcomes are related to the larger context of the game. Meaningful play can be difficult to achieve if players are not able to judge and understand their progress through the possibilities that the game offers (Salen and Zimmerman 2003, 265). Figure 15 suggests, that this was at least in some degree the case in *Bear 71*.

This could be largely explained by the finding that the most of the participants described their role in *Bear 71* as an observer. This role is closer to viewing experience of a documentary film than the role of a dynamic interactor, a shaper of events, or a main character to whom the events happen to, familiar from games. As interviews highlight, very short introduction for basic commands is given in the opening titles, but no guidelines or even hints for interaction are given later when the interactive part begins. Consequently, majority of participants were not sure what to do when the map appeared and interaction phase started. Hence, the most of participants didn't involve themselves into spatial-ludic aspects of the experience in the beginning but rather concentrated on the linear narrative.

In digital games the possibility of failure can be important for the agency of the player; especially with more action-orientated games players need to perform in a certain way to accomplish success in the game (Calleja 2011, 58). Thus, the ludic involvement in games is often connected to kinaesthetic part of the experience. Consequently, the lack of goals or increasing difficulty in *Bear 71* can thus partly explain the minor role of kinaesthetic involvement in the results. While users of *Bear 71* are in kinaesthetic sense interacting with the interface, their actions do not necessary lead to meaningful consequences that shape the experience or structure of artefact itself.

Clearer goals and more meaningful choices could have furthermore increased the procedural aspects of the experience that Murray (1998, 71-73) relates to interactive experience. Furthermore, since the procedural aspects of interactive experiences are linked to their persuasiveness (Bogost 2007), more structured ludic aspects could have been tied to the overall discourse of the interactive documentary. *Bear 71* could have for example made clearer arguments about surveillance and tagging of animals by stronger use of procedural rhetoric; instead of only positioning the user “to surveil” the map, actions and outcomes of the user could have been related to processes of modifying nature that are discussed in the documentary. The possibility for this is highlighted in the answer of one participant:

> Since it discussed the effect of that human action has for the lives of bears I hoped that I would have been more involved. To feel that I am also a part of the processes that destroys this environment and tags these animals. (Female 25, Videographer.)

Playfulness is an ambivalent term and categorizations such as Caillois' (1961) *paidia* and *ludus* are often intertwined in terms of games. According to Murray (2012, 380) playfulness has elements of *paidia* and *ludus* since it is both "an openness to the unexpected and a desire to repeat significant cause-effect sequences, they both can be seen as a part of an active exploration of the rules by which things work". Despite the ambiguous term, participants were asked if they found the experience with *Bear 71* playful. As suspected, participants understood the term in multiple ways but about half of the participants did not found the experience playful because of the serious topic. While the relations between serious and play have been discussed since Huizinga's ([1944] 1980) landmark study *Homo Ludens*, such a binary result was surprising. However, instead of being a problem of combining serious topic with ludic mechanics, it could rather be a question about the balance of the experience. As mentioned, ludic qualities of *Bear 71* were not found to be connected to the narrative. Since the narrative-affective involvement is so dominant, there is not much space for other, for example playful, approaches, as highlighted in the following answer:

> Ending was so sad that I just stared the screen and didn't feel like exploring the map anymore. The emotion was so strong. […] The two videos in the end put me in to state that I really just want to have cigarette and think about it and not to play again. It was just not a time to play anymore. (Female 29, IT developer.)

4.1.6 Shared involvement

During the interviews none of the participants described their experience as social. When asked if they would consider it to be a social experience, participants reported it to be "very private", "individual", "one directional" as well as lacking two-way communication and other users.

When asked if participants noticed a presence of others in the documentary, many participants mentioned the other animals in the map as well as aspects of human made infrastructure such as cars on highways, trains or small cities. Few participants also noticed other characters marked as humans in the map. However, majority of those who noticed other human characters didn't observe them more since their interests were at that moment in something else. Only one participant reported on repeatedly clicking other human characters on the map but stated that all she could see was "always the same trail camera footage of humans walking in the forest" (Female 26, Entrepreneur).

While *Bear 71* supports user-to-user communication with simultaneous online users that have accepted the use of webcam, it is not in the core of the experience. One participant (Female 28, Student) expressed that she liked it more as a personal than a social experience because of the topic; identification to the subject and following the story could have been harder if there would have been yet another additional interactive element.

Participants didn't communicate with other users in the documentary, since no other users were apparently online when two participants accessed the popup window with webcam feeds. However, one participant found the experience social because she felt a connection with other characters in the map:

> It was social in the sense that I was with Bear 71 and other animals. It was a bit like when you are playing a game, not necessarily even an online game, and you can feel that you are not alone even if you are alone with your computer. You are with the characters of the game. (Female 29, IT developer.)

The answer is similar to another participant's experience, who's description of his position in the work is closely connected to the character of Bear 71. Here the participant's immersion to narrative and spatial world have dimensions of shared involvement:

> Interviewer: What was your position in the work?
>
> Male 24, Student: Well, an observer. A traveller that came to the forest. And a guide is taking him through that forest.
>
> I: What supported this experience of being an observer?
>
> M24: The narrative. She was constantly telling the story and basically we explored the map. She was moving around, I was moving around, and we were talking. That's how it felt.
>
> I: So did you feel like you were communicating with the bear?
>
> M24: Yes.
>
> I: Could you describe what made you feel like you are in communication with the character?
>
> M24: Well I wasn't speaking but she was speaking on a very human level. Telling me a story. Two people sitting across each other, and one of them is telling a story. That's how it felt.

While narrative immersion is unarguably important for the aforementioned examples, they are also strongly connected to sharing the same virtual space with the other characters. Hence, these examples resemble to findings in game studies that suggest that players are sensing cohabitation in virtual space even with NPCs, and that interaction with NPCs can be perceived by players as interaction with social entities (See Calleja 2011, 102). However, to more thoroughly understand the variance of social dimension in interactive documentaries, another documentary with clearer social emphasis or participative elements should be studied.

4.2 Beyond game studies: Documentary involvement

Since *Bear 71* can be discussed as a sort of hybrid media that combines elements and affordances of documentary films and interactive media, for example games, it is understandable that Calleja's Player Involvement Model may not be suitable for understanding all aspects of user involvement. Interactive documentaries are a continuum of documentary film tradition, that has a long and vivid history of experimenting with representing the reality. This tradition, moreover, has its conventions that can effect the involvement of the users, as well as create expectations about the nature and purpose of the work.

When asked, all but one participant would describe *Bear 71* as a documentary. While the fact that *Bear 71* begins with opening titles stating "This is a 20-minute interactive documentary" definitely offers some framework and guidance for the experience, the interviews suggest that the attributes that made *Bear 71* a documentary for the participants are deeply linked to the documentary film tradition. The key aspect of a documentary, portraying real life (Aufderheide 2007, 2), was often mentioned in the interviews; the participants highlighted the authenticity of the story as well as real video footage and information conveyed in *Bear 71*.

Interviews furthermore suggest that some motivations to continue engaging with *Bear 71* are linked to Nichols' (2010, 38) idea about audience's expectation to learn while watching a documentary film. Several participants described their experience as an educative one. Moreover, processes of interaction were in these cases often connected to learning. For one participant for example, learning something new was in the core of the experience as well as connected to spatial-ludic aspects of the documentary.

> Going around the map and finding all these other animals and learning from them was the most interesting and rewarding part of the experience. I enjoyed getting these short bursts of facts about different animals and things that were scattered around. (Male 37, Software engineer.)

Portraying reality in documentary films has often been discussed in regards to capability to influence how audiences regard and understand the world portrayed; documentaries are ideologically asserted, persuasive, and they reflect the values of their makers (see e.g. Nichols 2010, 118-119). As discussed in section 2.2.4, in interactive documentary research, the impact of a documentary has been previously studied in connection to the active and participative role of the user.

While *Bear 71* does not involve its users in taking part in engaging with the documentary discourse and social involvement in it was regarded low in the study, one of the participants (Female 26, Entrepreneur) wished to get more involved in this manner. According to her, the interface could potentially afford a multi-user experience where users could discuss and be encouraged to find different solutions for tagging animals and effecting their natural habitat together. Furthermore, for one participant the information in *Bear 71* lead possibly to a concrete action:

> People need to see this to realize the things that we do to nature. It made me think about it, and I would like to read more about the issue as I am actually going to Canada soon. After seeing this I want to find out more what I can and cannot do in national parks. (Female 29, IT developer.)

Her answer highlights the importance of user's relationship with the documentary topic and discourse to activate the users and to make the change.

4.3 Desire for holistic immersive experiences

As mentioned previously, according to the interviews the most of the negative aspects of participants' experiences occurred as different modes of involvement were in conflict with each other. Majority of participants reported on making a decision of either concentrating on listening to the storyline or exploring the virtual world to avoid a conflict between different modes of involvement. This is resembling to previous interactive documentary studies that have found linear narrative and explorative navigation problematic to combine (see e.g. O'Flynn 2012, 144-146). Results suggest that in *Bear 71* the two aspects are even more colliding since they take place simultaneously.

According to the interviews, many participants regarded spatial-ludic exploration and narrative-affective story as separate parts of the experience that did not often connect to each other. Interestingly, several participants felt that the narrative-affective and spatial-ludic spheres of the experience offered different roles or positions for the user, and that they were often in dissonance between each other.

> Sometimes it was like observing and some times like being part of the narrative, almost changing place with the bear, seeing it from the bears eyes. But then there were times when you were exploring somewhere and you weren't closely part of the story. (Female 28, Student.)

O'Flynn has discussed this disjunction between linear audio narration and nonlinear visual content in *Bear 71* as a possibly conscious design decision "to create user experience of alienation and tension" (2015, 81) that would support the overall discourse of the documentary. However, the participants of the study took this disjunction mainly as negative aspect of the experience and tried to adapt to it. None of the participants mentioned the disjunction of approaches in regards to aforementioned O'Flynn's suggestion for its effect on textual on thematic interpretation. However, for one participant, who according to quantitative data immersed the most in the experience (see Figure 16), these two roles were supporting each other:

> When I was really focusing on the story of the bear, it was so well narrated that I sort of felt for the bear, like felt my own emotions. And when I sort of distanced myself and watched the cameras, then I was an observer who is above this world and can control and observe, and is sort of distant. They really complemented each other. (Male 24, PhD student.)

However, another participant (Male 24, Student) described the experience of listening to the story and exploring the content of the map as "it was like when you are watching a TV and doing a crossword puzzle at the same time". The interaction between the two aspects was found missing since the user's interactions during exploration didn't change the narrative nor shape or effect the virtual world.

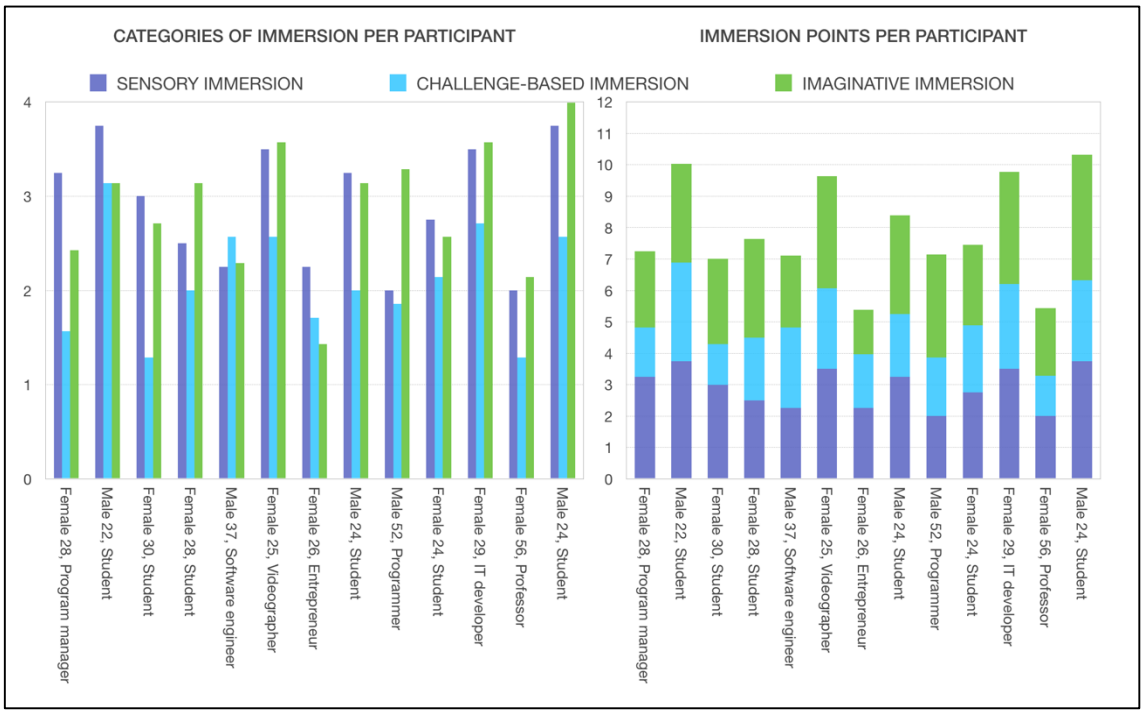

Figure 16. Participants' immersion in *Bear 71*. The results of SCI-model of Gameplay Experience questionnaire for 13 participants.

Results provided by questionnaire based on Ermi & Mäyrä's SCI-model of Gameplay Experience (see Appendix 3) are not fully suitable for comparing the differences between the found two main emphases of immersion in Bear 71, namely spatial-ludic and narrative-affective emphases. SCI-model's category of imaginative immersion includes both narrative and affective aspects of the experience, but spatial-ludic aspects are separated into two different categories of sensory immersion (spatial) and challenge-based immersion (ludic). Consequently, in bar charts of Figure 16, instead being another half of the dualistic experience, imaginative (narrative-affective) immersion represents only one third of the overall immersion. Thus, especially in the chart displaying immersion points per participant (Figure 16), bars are not accurately referring to the balance between narrative-affective and spatial-ludic immersion.

When comparing the immersive experiences through Ermi & Mäyrä's SCI-model, imaginative and sensory immersion were both dominant for users' experience in six cases and challenge-based immersion was the most dominant in one case. Challenge-based immersion, that includes the ludic aspects of the experience, was the weakest mode of immersion for 10 out of 13 participants, which correlates to reported lack of ludic qualities in the interviews. While quantitative methods were not in the centre of this study and the size of the sample is not sufficient to be statistically reliable, the results of SCI-model

questionnaire still support the finding that participants had various kinds of immersive experiences with different emphases.

While the results suggest that participants' experiences varied and different choices of how to approach *Bear 71* were made, interviews indicate that participants valued and hoped for holistic experiences where different modes of involvement would support each other. Results suggest that immersion appeared to be stronger during moments of such holistic experiences. One participant explained the value of moments where the linear narrative corresponded to exploration in the spatial world:

> Male 22, Student: For me the story was complemented by the world. When I saw the train for example, I recalled that she mentioned it in the voiceover. There were also some scenes where I almost felt that she is talking about the things that I am seeing.
>
> Interviewer: How did it make you feel?
>
> Male 22, Student: That was the coolest part of all, […] when suddenly I heard her speaking about something what I was seeing it felt very reassuring, like OK, I'm doing it well.

The following experience explained by another participant describes a holistic experience, where synchronized spatial involvement and narrative involvement lead to strong affective involvement.

> Male 24, Student: There were little things that I'm not quite sure if they were intended. Like as the bear was about to talk about the incident, the train hitting them, she was actually moving towards the railroad on the map. That was really nice. I realized, oh she is moving towards the railroad and then the video started to play and I was like oh shit, now the train is coming.
>
> Interviewer: How did this make you feel?
>
> Male 24, Student: I was actually prepared to cover my eyes if they had shown the actual train hitting the bear. Good thing they didn't, or is it good? I mean, I watch carnage and horror movies without problems but now I got into calm and mellow mood and got all the story. So I definitely felt for the characters.

In both of the examples above, narrative-affective involvement was supported with events connected to spatial-ludic exploration. Some participants mentioned that experiencing *Bear 71* lacks motivations to return back to the experience, to try it again or to continue later.

> I was hoping that there would be some more interaction than just the video. Now it was just the same all the time. It was enjoyable and interesting, but I hoped for some game elements or more variety with interaction. In computer games there are so much more to do than just to click and watch a video. I enjoyed this now but having more interaction could help people to spend longer time with it or to come back and try it again. (Female 29, IT developer.)

To involve users for a longer period of time, interactive documentaries could pay attention to elements of macro-involvement (Calleja 2011, 38-40), that takes into consideration factors that effect on user's involvement with the documentary before and after the actual interaction.

Examples of macro phase in interactive documentaries could be a pursuit of shared or individual goals and challenges the documentary provides, achieving the possible rewards and results of those goals as well as participation in socializing and contribution inside a documentary-specific community. Thus, macro-involvement could potentially engage users further to return to experience later and to participate in constructing and realizing a documentary discourse. Consequently, the offline engagement that macro-involvement reflects is closely connected to civic, persuasive and participative aspects of interactive documentaries that have been an interest of previous studies (see e.g. Nash 2014b, 2017). Since previous research suggests that some interactive documentaries suffer from low return-rate of the users (Aufderheide 2015, 76-77), taking users' macro-involvement into account has potential in supporting to understand and to design more holistic and diversely engaging interactive documentary experiences.

4.4 Limitations of the study and prospects for future research

While the quantitative data delivered by the questionnaire reflected the answers of the participants and to a great extent supported the findings of the interviews, a larger quantitative sample could provide statistically significant information about immersion in *Bear 71* and interactive documentaries in general. Furthermore, the questionnaire based on Ermi and Mäyrä's (2005) SCI-model of Gameplay Experience Model, that was used used in the study, did not entirely correlate on Calleja's (2011, 43-44) six modes of involvement. Thus, the used questionnaire could be improved to include statements also about social and kinaesthetic immersion.

The duality of experiences between narrative-affective and spatial-ludic approaches was not fully expected before the actual research. Thus, alternatively, the questionnaire could be divided into two categories according to narrative-affective and spatial-ludic approaches instead of three SCI-model categories that now separated spatial and ludic aspects of the experience but combined narrative and affective ones.

Comparative study between multiple interactive documentaries could provide interesting information about how personal preferences to approach interactive documentaries vary between different artefacts. Applying the used methodology to other interactive documentaries could furthermore provide information on if the narrative-affective approach and spatial-ludic approach are as clearly distinguishable approaches in other documentaries that for example have more nonlinear narrative. Applying the framework especially to an interactive documentary that doesn't include as dominant linear narrative as *Bear 71* could bring forth more details about the spectrum of different approaches to engage with interactive documentaries. Studying an immersion of different documentary artefact could additionally reveal new modes of immersion and engagement in interactive documentaries, that were not significant for *Bear 71*.

Since *Bear 71* offers limited means for social participation inside the documentary, the case study did not provide information about social aspects and participation as an immersive part of interactive documentary experience. The social aspect of an engaging interactive documentary experience is very little studied, while the potential to engage users also offline is recognised (see e.g. Nash 2014b, 2017; Rose 2014). It is, however, important to acknowledge that some participative interactive documentaries discuss specific themes and are created for participation of a certain target group, as *Question Bridge* or *18 Days in Egypt*. Thus, interactive documentary engagement and immersion through social participation should be rather studied inside target groups or within already established communities, as well as possibly utilizing re-evaluated research methodology.

5 CONCLUSION

The results suggest that game immersion studies can help to understand immersion and the value of different modes of involvement in interactive documentaries. The selected methods, especially semi-structured interviews, provided enlightening data within the selected framework, as well as a revealed a new mode of involvement in interactive documentaries, that is related to learning and the documentary film tradition.

The results suggest that participants engaged with and immersed in *Bear 71* in different ways. Experiences of the participants varied and specific modes of involvement were more important for different participants. Conscious or unconscious choices on how to engage with the documentary were made. Similarly to the finding by Nash (2014a, 232), the results indicate that participants made choices on how to engage with the work according to their personal interest as well as according to previous experience and familiarity with media; a participant with the least experience with interactive media engaged mainly in listening only the voiceover narrative, and participants who were familiar with games tended to engage in spatial-ludic aspects of the experience.

Consequently, besides experiences, also media texts and interpretations varied according to interests and involvement of the participants. As in game immersion studies (Ermi and Mäyrä 2005), immersion in interactive documentaries is connected to textual interpretation and processes of meaning-making.

Two main approaches to engage with *Bear 71*, namely narrative-affective and spatial-ludic approach, were found. Other two modes of involvement in Calleja's Player Involvement Model (i.e. kinaesthetic and social involvement) were less significant with the chosen interactive documentary.

For the most of the participants, experience was narrative-affectively emphasised. Hence, they engaged strongly with the linear voice-over narrative and emotions that it aroused. The prevalence of narrative-affective immersion can be explained by *Bear 71's* dominant linear narrative that utilizes conventions of affective engagement. Furthermore, the narrative-affective emphasis is typical for a traditional documentary films, and thus merely a fact that *Bear 71* introduces itself as a documentary can set a frame of narrative-affective expectations for experiencing it.

However, since the user's progress in *Bear 71* is not fundamentally dependent on the user's interaction, spatial-ludic aspects of the experience are not given the same degree of importance as the linear narrative. The linear narrative in *Bear 71* suppresses the more interactive (spatial and ludic) modes of involvement and can consequently direct users towards more narrative-driven and non-interactive experience. The suppression of spatial-ludic elements manifest in design decisions such as lack of guidelines for interaction as well as the role and agency of the user.

The study highlights that even though *Bear 71* supports multiple ways for approaching it, the participants were searching for the optimal or correct way for using it. Some participants managed to find a suitable ratio between listening the story and exploring the virtual environment, but concentrating on two different aspects simultaneously was hard for the most of them. However, the participants appreciated holistic experiences where the modes of involvement supported and related to each other. In many cases immersion appeared to be deeper when narrative-affective and spatial-ludic modes of involvement supported each other and were synchronized. The study suggests that spatial involvement supported the immersive feeling of being transported to the virtual environment, even for participants with stronger narrative-affective emphasis.

Besides the modes of involvement in Calleja's Player Involvement Model (2011), interactive documentaries involve their users in ways that are typical for documentary tradition. Results suggest that the participants involved themselves in learning, that was often related to more encyclopaedic (as described by Murray 1998, 83-90) aspects of the experience. *Bear 71* offers its users a database of information to explore through its spatial world. For many users the interactive map that works as a hub of information and documentary content was interesting to explore because of the coherent factual information it provided. This suggest that applying spatial-ludic means to explore the content can support further engagement with database structured interactive documentaries, where the fragments of content create an experience environment that can be explored according to own preferences. The study implies that besides following the narrative, motivations of learning more about the topic, figuring out how the experience works, and exploring the content intuitively according to own preferences are important for interactive documentary users.

While *Bear 71* could be experienced narrative-affectively even without any interaction, the study suggests that the traditional viewing experience of a documentary audience was not a dominant model for experiencing it. All participants interacted with the documentary in some degree, and understood the significance of interaction for the experience. Furthermore, in our increasingly ludic societies and cultures, the playful practices and explorative models for interaction have became widely available and distinguished. The study indicates that spatial-ludic means to engage with *Bear 71* were significant for more than half of the participants.

The participants who engaged more with spatial-ludic aspects of the documentary valued the explorative and playful aspects of it. The freedom to explore the map according to personal preferences created intrinsic goals and playful strategies. However, explorative and playful aspects of the experience awaked expectations for further ludic involvement. Thus, results suggest that applying playful qualities and game-like affordances in interactive documentaries can increase users' expectations of meaningful play, that according to Salen and Zimmerman (2003, 37) occurs when players understand the consequences of their action, and those actions and outcomes are related to the larger context of the game.

Consequently, the results suggest that ludic aspects of interactive documentaries could engage users in exploring the content, especially if the interaction shapes the structure of the documentary. Procedurality, together with meaningful choices and play are important for interactive documentary users that enforce ludic involvement. The amount of participants that emphasized the ludic aspects in the interviews was surprisingly high; altogether 9 out of 13 participants discussed the significance of ludic aspects for their experience. While the notable role of narrative immersion in the study was expected beforehand due to the dominant linear voiceover narrative, the ludic aspects of the experience were discussed more than expected.

Applying Calleja's (2011) Player Involvement Model to *Bear 71* was successful, even though the model is designed for games. To further justify the applicability of the model when studying immersion in interactive documentaries, different interactive documentaries should be studied with the model. Studying immersion in another documentary with different emphases on involvement could furthermore reveal new modes of immersion and engagement in interactive documentaries, that were not relevant

or dominant in *Bear 71*. Thus, this study is in no means a comprehensive view on immersion in interactive documentaries, but rather one example of the diversity of the immersive experiences within interactive documentaries.

When pondering the future prospects of interactive documentaries, it is necessary to remember that this thesis has discussed mainly web-based interactive documentaries, that represent only a segment of the evolving field. Scholars in the field of interactive documentaries suggest that the future of interactive documentaries is likely in shorter forms suitable for mobile devices, as well as connected to the development of augmented reality and virtual reality (Gaudenzi 2017). The same trends are strongly related to games. The game industry has during its whole existence successfully adapted to, as well as shaped, new consumer electronics. The popularity of mobile gaming together with successful mobile game business models have effected to game industry in a great degree, and current developments in augmented reality gaming show excellent premises for location based, social and ludic mobile content. It is very likely that affordances of mobile and augmented reality gaming would furthermore intertwine with documentary content in the future. That together with growing interest in emergent virtual reality highlight how increasingly import it is to understand modes of user involvement and the rich variety of immersion also in the future of interactive documentaries.

On a broader scale, however, one of the major future challenges of interactive documentaries is that in what degree they manage to rethink and challenge the characteristic of documentary film tradition, the linearity of moving image and narrative, in new media environments. As Eric Zimmerman (2015, 20) states in his "Manifesto for a Ludic Century", while the 20th century was dominated by the linear information of moving image, the ongoing century is ludic: "When information is put at play, game-like experiences replace linear media. Media and culture in the Ludic Century is increasingly systemic, modular, customizable, and participatory".

Correspondingly, current interactive documentaries seem to face difficulties when concentrating on a consistent narrative rather than an actual experience that the user has in an interactive environment. Understanding game studies, ludification and immersion could help interactive documentaries to progress further towards holistic *documentary environments*, where story elements would be subservient to complete overall experience of the user, similarly to Calleja's (2011, 116) idea of the role of narrative in games. Reality

in interactive documentaries could be represented through manifold of other means than a linear story.

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APPENDIX 1: INTERVIEW GUIDE

Interview guide (v3)

25.5.2017

Opening questions

How would you describe the experience?

What were your first impressions? Did they change?

How did you learned what you could do?

(Could you go through/verbalize the process of your experience?)

Spatial involvement

How would you describe the world of the work?

How was exploring the work/world?

What caught your attention while exploring?

(How would you describe the audiovisual experience?)

(What element (of media) was the most dominant for your experience? How did it effect your experience? Did it effect your actions?)

Kinesthetic involvement

How did you find learning the controls?

What were your impressions on navigating?

Did you need to concentrate on controls or commands to do what you wanted to?

Narrative involvement

What was the work about for you?

What aspects of it made the story?

How interactive did you find it?

What was your position in the work?

In what ways do you think your interaction shaped the story you got?

(Was story coherent and consistent for you? Was there something you didn't understand? Did you fill the blanks yourself?)

Affective involvement

What kind of emotions did it awake?

What supported or caused these emotions?

Did you sympathize with a character/story/some information? Why?

(What do you think a person should feel after the experience? Did you feel that way?)

Ludic involvement

Was your experience playful?

How did you find the choices offered?

Did you feel that the choices you made had an effect on the outcome?

Were the choices meaningful for you?

(Were there some rules? / How did you find out what you could do and what not?)

Immersion in general

Was there something that had a negative effect on the experience?

Was there something you didn't understand?

Were there moments you didn't know what to do?

(Do you think it was balanced experience?)

Shared involvement

Did you notice the presence of others? (Other players/NPC?)

Did you try to communicate with others inside the world?

Was your experience social?

Ending questions

How would you describe/categorize the work?

What would you compare it to?

Would you call it a documentary? Why?

(Would you try it again? / Would you recommend it to others? To whom?)

(Is there anything you would like to add?)

APPENDIX 2: QUESTIONNAIRE 1

Demographic information and familiarity with media.

PERSONAL INFORMATION

Male ☐

Female ☐

Other ☐

Occupation: _____

Age: _____

HOW FAMILIAR ARE YOU WITH…

Video games (console or computer)

0	1	2	3	4
Not familiar at all				Very familiar

TV-documentaries

0	1	2	3	4
Not familiar at all				Very familiar

Games for smartphone or tablet

0	1	2	3	4
Not familiar at all				Very familiar

Online video platforms (YouTube, Vimeo etc.)

0	1	2	3	4
Not familiar at all				Very familiar

Documentary films

0	1	2	3	4
Not familiar at all				Very familiar

Virtual reality

0	1	2	3	4
Not familiar at all				Very familiar

Online video-on-demand/broadcast services (Internet TV, Netflix etc.)

0	1	2	3	4
Not familiar at all				Very familiar

Interactive documentaries

0	1	2	3	4
Not familiar at all				Very familiar

Social media (Facebook, Twitter, Instagram, LinkedIn etc.)

0	1	2	3	4
Not familiar at all				Very familiar

APPENDIX 3: QUESTIONNAIRE 2

Based on Ermi, Laura, and Frans Mäyrä. 2005. *SCI-model for Gameplay Experience Questionnaire*.

HOW DO YOU AGREE WITH FOLLOWING STATEMENTS REGARDING YOUR EXPERIENCE WITH "BEAR 71"?

It felt suitably challenging.

0	1	2	3	4
Completely disagree				Completely agree

Character or characters in it felt like living persons.

0	1	2	3	4
Completely disagree				Completely agree

I had a clear feeling that I knew what I was doing and how I was progressing.

0	1	2	3	4
Completely disagree				Completely agree

I identified with how the characters felt in different situations.

0	1	2	3	4
Completely disagree				Completely agree

While interacting I was completely focused on observing the virtual world and its events.

0	1	2	3	4
Completely disagree				Completely agree

It looked credible and real.

0	1	2	3	4
Completely disagree				Completely agree

I sympathized with a character or with a situation.

0	1	2	3	4
Completely disagree				Completely agree

Sounds seemed to come from different directions of the virtual environment.

0	1	2	3	4
Completely disagree				Completely agree

I did not notice the passage of time.

0	1	2	3	4
Completely disagree				Completely agree

The events in it felt to be happening to me.

0	1	2	3	4
Completely disagree				Completely agree

While interacting, I had clear goals that I did my best to reach.

0	1	2	3	4
Completely disagree				Completely agree

I was very focused on my own performance while interacting.

0	1	2	3	4
Completely disagree				Completely agree

I enjoyed the fantasy or story provided.

0	1	2	3	4
Completely disagree				Completely agree

Its sounds overran the other sounds from the physical environment.

0	1	2	3	4
Completely disagree				Completely agree

I lost myself into pondering the puzzles and mental challenges of it.

0	1	2	3	4
Completely disagree				Completely agree

I was moved by the events in it.

0	1	2	3	4
Completely disagree				Completely agree

It challenged me to strive to the limits of my abilities.

0	1	2	3	4
Completely disagree				Completely agree

I handled also my own emotions through it.

0	1	2	3	4
Completely disagree				Completely agree